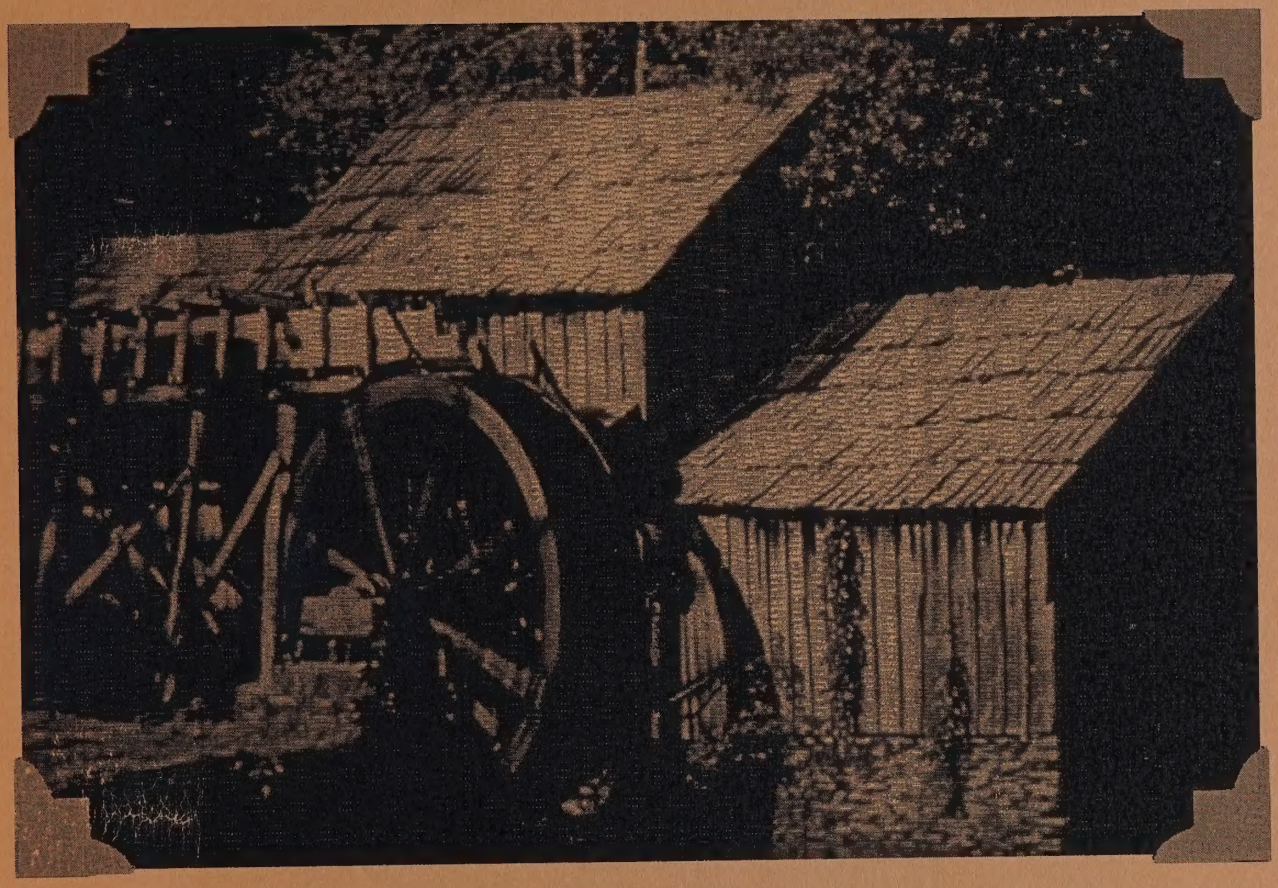
# The Big Picture



*A historical perspective ...*

## of Waterpower and Reservoir Resources

Service Center 1993



# DRAFT

## PREFACE

Certain government functions have lost knowledgeable, experienced specialists necessary for good management. When the government expanded after World War II, many employees entering at that time served with career employees from the turn of the century. These second generation employees served their careers and retired in the seventies and eighties. They, indeed, were specialists with years of experience in one location. When they retired, they left vacuums of knowledge and experience that have not been filled. Those of us who had the opportunity to work with them and know them realize we have a different government employee today. Modern managers specializing in management must rely on resource specialists for necessary accurate information for management decisions. The failure in the system is the lack of knowledgeable, experienced resource specialists like those second generation employees. Consequently, the government employees and managers of today are reinventing practices that have been lost for lack of documentation. This is very expensive and mistakes are being made daily that add to that expense.

This document attempts to capture the knowledge and experience of proven policies and practices for present managers. It does focus on a small function, but the lack of proper execution is unnecessarily causing large governmental expenditures. The focus is on Interior's unique Waterpower and Reservoir Resources (WRR) responsibilities, delegated to the Bureau of Land management (BLM).

This document is suitable for submission to the Advisory Commission reviewing Federal activities affecting the allocation and use of water resources. The Advisory Commission is assisting in the preparation of a report by the President as required by the Act of October 30, 1992 (Public Law 102-575, 106 Stat., 4693). This Act provided $10,000,000 for the President's report to fund the Commission and staff work accomplished by contract, and by the Departments of the Army and the Interior. This legislation is listed in the Appendix and is clear as to the Commission's responsibilities including: "The Commission shall--

> "(2) examine the current and proposed Federal Programs affecting such States and recommend to the President whether they should be continued or adopted and, if so, how they should be managed for the next twenty years, including the possible reorganization or consolidation of the current water resources development and management agencies;
>
> "(4) review the need and opportunities for additional storage or other arrangements to augment existing water supplies including, but not limited to, conservation;
>
> "(5) review the history, use, and effectiveness of various institutional arrangements to address problems of water allocation, water quality, planning, flood control and other aspect of water development and use, ..."
>
> "(6) review the legal regime governing the development and use of water and the respective roles of both the Federal Government and the States over the allocation and use of water, ..."
>
> "(7) review the activities, authorities, and responsibilities of the various Federal agencies with direct water resources management responsibility, ..."

This Commission's efforts would be an example of government employees and managers reinventing practices that have been lost for lack of documentation. If the Commission is not informed of the BLM's role and offered the BLM's support it is subject to either reinventing the information or reaching conclusions without sufficient information which are mistakes that could be very expensive. The support and information includes the history, the inventory, technical assessments, classifications, publications, and already existing planning information that is explained in this report.[1]

[1] This document was originally produced on November 23, 1993. On November 2, 2000, it was modified by changing the font and the pages were repaginated.

## Index of Policy Formulation

## INTRODUCTION

The Department of the Interior (DOI) has unique responsibilities in planning waterpower and reservoir sites and the resulting river management. The DOI responsibility is the direct result of legislation which has resulted in waterpower and reservoir Policy. This manuscript actually documents the evolution of legislation that established the policies. As the Policy history is chronicled this manuscript attempts to build a foundation for the explanation of the necessary future of the responsibilities and functions. The readers are reminded that legislated policy is usually a trial and error development process accomplished by successive Congresses with shifting membership.

The DOI responsibilities have been carried out quietly and effectively, but at the time the Policy was established it revolutionized the role of government. In order to explain and build an understanding of the responsibilities, this document is focused on legislation.

The operational functions of the DOI responsibilities have been delegated to the Bureau of Land Management (BLM). BLM has chosen to produce this document in an attempt to explain the government's, DOI's and BLM's roles and responsibilities for this function. The document was prepared by BLM's Waterpower and Reservoir Resources (WRR) program specialist.

## INFORMAL STATEMENTS OF POLICY.

Several informal "statements of policy" are necessary, because formal policy statements have overlooked the importance of this basic policy. The informal policy statements will be justified in the chronological order of the legislation initiating the topic.

### National Policy:

The first informal statement of policy is basic to the others:

THE FEDERAL GOVERNMENT SHALL RETAIN CONTROL
OF WATERPOWER AND RESERVOIR SITES
BECAUSE OF THEIR UNIQUE VALUE.

This policy has been established by Legislation, regulated by the Executive Branch, and upheld by Judicial Findings. The policy applies to undeveloped sites, the planning for their development, the regulation of the development, and control of operations of developed sites.

The policy took 114 years to develop, has withstood 76 years of challenges, and preserves resources for future generations. The application of the policy has been modified as necessary, but the base policy remains. The mechanics of accomplishing the policy has been developed by Congress. The policy requires the involvement of the Departments of Agriculture, Defense, Energy, and Interior.

A second informal statement of policy is a direct result of correct implementation of the first:

AFTER THE INITIAL DEVELOPMENT OF THE
WATERPOWER AND/OR RESERVOIR HAS BEEN REIMBURSED,
THE OPERATION OF THE DAM AND RESERVOIR IS SUBJECT
TO CHANGE FOR ALL BENEFITS.

This is clearly in the intent of the legislated Federal Water Power Act of 1920. Presently, many dam and reservoirs are reaching the end of the initial period of reimbursement, and debates continue on ownership, purpose, and possible new operating schemes. These debates should be held in the context of the original policy and reflect the lower operation costs. The operation schedule no longer has to provide monies to pay for the development and the developer's profits. The operation schedule can provide for less profitable reservoir and river management in cooperation with other dams and reservoirs in the basin. The new operations are to be a part of an overall river management scheme rather than an independent dam operating for the profit of the developer.

A third informal statement of policy involves the tools necessary to achieve the best possible operation of the dams and reservoirs:

LAND USE PLANNING MUST CONSIDER THE
CONTROL, PROTECTION, MANAGEMENT, AND USE OF WATER RESOURCES
INCLUDING THE EFFECTS OF STRUCTURAL MEASURES.

Congress is interested in correct information and adequate planning. The introduction of science and technology to resource decisions revolutionized government decision making. However, the role of the scientist and the role of the political process has been confused at times. "*The questions, for instance of where a dam could be built, how large it could be, and how much power it might produce are technical questions in the proper domain of the scientist. But the questions of when the dam shall be built, how its power shall be used, who shall pay for the structure and how much require policy decisions based on values and beliefs as well as technical data, and the political process is peculiarly suited to making this type of choice*" (Wengert, 1955, page 4). It is the responsibility of the BLM to provide the technical answers, but Congress is abdicating the responsibility of commissioning new dams. Instead, all of the recent new-starts are by private enterprise under the licensing authority of the Federal Energy Regulatory Commission (FERC) or the right-of-way authority of the land management agencies. In order to accomplish their responsibilities the FERC and land managers need the assessment of effects, the results of conflict resolution, and statements of the opportunities for mitigation or enhancement from land use planing.

**Interior Policy:**

The planning responsibilities of the DOI are original, essential, and fundamental for implementing the national policy. This responsibility includes inventory of possible sites, including where and how large they could be constructed. Next is an assessment of the value of the dam and reservoir. This includes the influences the dam would have on the river basin. The Secretary of the Interior may make temporary reservations of the promising sites and is charged with the publication of the results of investigations for long-range planning. The DOI furnishes dam and reservoir information and technical expertise on all land use planning teams, in order for the process to result in proper results directing the futures of dams and reservoirs in the river basin. This function is being accomplished by the BLM.

An informal statement of the Department of the Interior's Policy on the first responsibility would be:

IDENTIFY, EVALUATE, AND SELECT THE
WATERPOWER AND RESERVOIR SITES THAT ARE NECESSARY
FOR BASIN-WIDE STREAMFLOW REGULATION AND
ENSURE THEIR CONTROL BY THE FEDERAL GOVERNMENT.

This function is the directly legislated, solitary responsibility of the Department of the Interior.

An informal statement of the Department of the Interior's Policy on the second responsibility would be:

PUBLISHING THE WATERPOWER AND RESERVOIR VALUES
OF PUBLIC LANDS FOR THE
GENERAL INFORMATION OF THE PEOPLE OF THE COUNTRY AND THE
ADMINISTRATION OF THE PERTINENT LAND LAWS.

All land management agencies (Department of Agriculture and Interior) have responsibility for the protection of the potential WRR sites and resource planning. They all have a requirement for the results of this function.

All of the listed Departments have regulation, development and operation responsibilities interacting with (1) the potential development of waterpower and reservoir sites, and, (2) the operation of existing waterpower and reservoir sites after the construction costs are liquidated. They all have a requirement for the results of this function.

This document will attempt to justify these policy statements by an historical account of governmental debate, Congressional legislation, Executive regulation and Judicial findings.

## IDENTIFICATION OF WATERPOWER AND RESERVOIR SITES.

### Mill Seats.

Within 20 years of the founding of the Nation, Congress recognized the importance of an orderly development of the emerging nation. The Act of May 18, 1796 (1 Stat., 464-469) was an aggregate of several emerging policies for the orderly land disposal and the information needed for land administration. The issue was the sale of land in the territory northwest of the Ohio River, above its confluence with the Kentucky River. Several of the aspects of the land policy addressed in the Act of May 18, 1796, are mentioned here as a foundation block for this manuscript:

- Land was considered an asset to be cashed for meeting government expenses. The Act attempted to solve a debate over whom the lands were sold by offering unlimited quantities and smaller parcels.

- The Act retained the previous practice of requiring a survey of the land before the transfer of ownership. This survey also established the watercourses of the streams.

- The Act of May 18, 1796, asked for the surveyors to inventory of certain resources, and record the description and quality of the lands.

- The Act of May 18, 1796, reserved townships for the salt springs resources, as well as the center 4 sections of each township.

The information collected by the survey was provided to the officers superintending the land sales. Mary C. Rabbitt, historian of the Geological Survey, described the reason for this activity: "*... so the Surveyor-General could have prepared a description of the lands for the officers supervising the sale--in effect, the lands were to be classified before sale*" (Rabbitt, 1979, page 18). The Act was one step in the evolution of land policy but serves as a good early historical example that Congress was wrestling with land disposal policy concurrently with resource policy.

The focus of this manuscript is on the information concerning streams and waterpower. Under the provisions of the Act of May 18, 1796, "*Every surveyor shall note in his field-book the true situations of all mines, salt licks, salt springs, and mill seats which come to his knowledge; all watercourses over which the line he runs may pass; and also the quality of the lands*" (Chapter 29, 1 Stat., 466; R.S. 2395). The mill seats were locations where water drops could be utilized by water wheels for mechanical mills, i.e., waterpower sites.

The natural availability of water resources was an important factor in shaping the exploration, settlement, and development of the nation. "*Rivers provided the principal paths for exploring and trading with the nation's interior, cities grew up around the best harbors and major rivers, mills and factories were located alongside streams to harness the power of flowing water, and*

*agriculture was located where rainfall was adequate or a stream could easily be diverted to irrigate neighboring lands*" (Frederick, 1991, page 28). The Act of May 18, 1796, has the provision in Section 9 that: "*And be it further enacted, That all navigable rivers, within the territory to be disposed of by virtue of this act, shall be deemed to be, and remain public highways*" (1 Stat., 468).

The government continues to need the knowledge of the resources available and their location for informed administration of laws concerning Federal land. As demonstrated by the Act of May 18, 1796, part of the unique resources of the nation was the rivers for navigation, water from the rivers for irrigation, and the mill sites for waterpower.

**Reservoir Sites.**

The next legislation concerning DOI's responsibility for waterpower and reservoir sites did not occur until 1888. Congress had started passing "River and Harbor" legislation which had authorized the Department of War's Corps of Engineers (COE) to make specific improvements for navigation and harbor improvements. They asked the Department of Agriculture for information concerning irrigation in the western regions and received their report in December 1886. The report stated that the "*area of irreclaimable arid land was quite moderate in extent, but in a large part of it, the water supply was both inadequate and irregular*" (Rabbitt, 1980, page 10). But there was another agency whose leader was advancing another perspective. The agency was the United States Geological Survey (USGS) and the leader was John Wesley Powell. The new legislation of 1888 was specific to the USGS and initiated evolution of the policies for planning waterpower and reservoir sites and the resulting river management.

On March 20, 1888, Congress passed a "*Joint Resolution directing the Secretary of the Interior by means of the Director of the Geological Survey to investigate the practicability of constructing reservoirs for the storage of water in the arid region of the United States, and to report to Congress*" (25 Stat. 618). This was the original formal charge of an economic overview toward the benefits of the government constructing reservoirs. A portion of the Resolution is quoted for comparison purposes:

> "*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Interior by means of the Director of the Geological Survey be, and he is hereby, directed to make an examination of that portion of the arid regions of the United States where agriculture is carried on by means of irrigation, as to the natural advantages for the storage of water for irrigating purposes with the practicability of constructing reservoirs, together with the capacity of the streams and the cost of construction and capacity of reservoirs, and such other facts as bear on the question of storage of water for irrigating purposes; and that he be further directed to report to Congress as soon as practicable the result of such investigation.*"

However, more than an economic report was intended. The Senate, one week later, passed the following resolution:

> "*Resolved, that the Secretary of the Interior is hereby directed to report to the Senate what appropriation is necessary to enable the United States Geological Survey to carry into effect the joint resolution 'Directing the Secretary of the Interior by means of the Geological Survey to investigate the practicability of constructing reservoirs for the storage of water in the arid region of the United States and to report to Congress,' approved March 20, 1888, and the several acts of Congress requiring such Geological Survey, under the direction of the Secretary of the Interior, to classify the public lands and furnish a map or maps showing the various divisions of the public domain suitable for agriculture, mineral and other purposes; and particularly to segregate the lands susceptible of irrigation, where irrigation is required, from other lands, and designating places for reservoirs, canals, and other hydraulic works*" (Follansbee, 1938, page 33).

Note the reference to classify the public land, segregate the lands, and designate places for reservoirs. These two legislative actions and the subsequent action on October 2, 1888, were provoked in an effort to aid the homesteading of the West and the "classification" of land. In homesteading and classifying, Congress was developing the legislated policy, and subsequent legislation followed. But the timing was dictated by adversarial circumstances to the homesteaders. A brief history of homesteading, classification and timing are discussed next for understanding of this legislation.

Public Lands and Homesteading. Part of the historical events leading to the resolutions was a change in Public Land disposal. The topic is summarized in the first chapter of Opportunity and Challenge; The Story of BLM, written by James Muhn, historian for the BLM (Muhn, 1988, pages 2-52). A comprehensive discussion is detailed in History of Public Land Law Development, by Paul W. Gates (Gates, 1979). The topic is too complex for a full discussion here, but a brief summary of certain pertinent points of the evolution of homesteading policy up to 1862 is included.

Congress has had to debate the balance between the individual rights and corporation rights since its beginning. The individual's rights began the debate. Settlers who occupied the western territories belonging to states and foreign governments were granted title by Congress. "*At the outbreak of the Revolution, the Continental Congress and states offered land to recruits who joined the army and navy*" (Muhn, 1988, page 11). The Congress even offered land to British soldiers if they would desert.

The original official policies allowed for a balance. On October 10, 1780, the Congress of the Confederation initiated the policy that the "*lands ceded to the United States to be disposed of for the common benefit of the United States--grants to be made or lands settled at such time and under such regulations as were agreed upon by the United States in Congress assembled*" (Young, 1971, pages 6-7). Then on May 20, 1785 the Congress of the Confederation passed a

Land Ordinance for the orderly disposal of public lands. This included auctioning surveyed townships for revenue and using one-seventh of the townships for military land warrants. There were provisions for reserving lands for revenue for public schools, and the reservation of one-third of the interests in gold, silver, lead or copper.

The debates on land policy centered on whom the lands should be sold. Alexander Hamilton wanted the lands sold to capitalists and land companies who could pay top price for public lands. Thomas Jefferson, the first Secretary of State, wanted the government to sell public lands in small tracts to self-sufficient family farmers.

At the request of Congress, Alexander Hamilton, Secretary of the Treasury prepared a plan for disposing of the public lands. The plan was completed on July 20, 1790 and presented July 22, 1790 to the House of representatives. The plan titled "*Report on a Plan for Disposing of the Public Lands*" provided for the selling of public lands in both large and small units, the former for revenue, the latter to accommodate the inhabitants of or emigrants to the western country. The plan envisioned three types of purchasers. "*monied individuals and companies, who will buy and sell again; associations of persons who intend to make settlements themselves; single persons, or families now resident in the western country, or who emigrate hither hereafter*" (U.S. Department of the Interior, 1960).

The Land Law of 1796 (May 18, 1796, 1 Stat., 464) was an attempt at providing for all purchasers. Public Lands north of the Ohio river could be purchased in unlimited quantities, with one-half of the townships being sold in quarter townships and the other half offered in 640 acre sections. It was hoped that the family farm settlers would buy the 640-acre parcels. The lands had to be surveyed and the first auctions were held two years later, with disappointing results. (Muhn, 1988, pages 6-8) Large land companies had the capital to purchase the majority of the lands sold.

The debate continued and Congress passed legislation that offered smaller parcels, offered credit, and other enticements for the individual. Initially, the land was purchased by speculators rather than settlers. But the trend was successful. The private purchaser was given preference by the Preemption Law of 1841. As the offered land became less desirable, speculators purchased less of it. Lands skipped by previous auctions were offered at reduced beginning bid prices, authorized by the Graduation Law of 1854.

Finally, the original homestead act was signed by President Abraham Lincoln on May 20, 1862. The debate had centered over offering free land vs continued revenue sources. An Act in 1860 had provided for settlers to purchase land for twenty-five cents and acre, but was vetoed by President Buchanan. Land was now free if the capital was available to build houses, cultivate the land, and for seed. The Homestead Act and the end of the war prompted a new migration to the West, as soldiers and displaced families looked to homesteading to find a "new life" after the war.

On March 3, 1877 (19 Stat., 377), the initial act to sale desert lands was approved. "*Under the desert-land acts entry may be made on lands which, by reason of lack of rainfall, will not produce native hay or other agricultural crops or trees without irrigation. Such lands may be entered by irrigating and producing crops on not less than one-eighth of the area. No residence is required*" (Smith, 1913, page 22).

Thus by the time of the 1888 legislation, land disposal practices had shifted. The best lands had been sold for revenue, and the remaining lands were worth less. In supporting settlement and development, Congress turned to homesteading. This was the first of several homesteading laws as it soon became apparent that remaining lands may need supplemental water for irrigation. Major Powell in 1878 was proposing that land classification was needed. He stated that the administration for successful homesteading required accurate information concerning cultivation of land and water sources. It was necessary to group land into classes dependent on their capability to raise crops without supplemental water, raise crops with irrigation systems, or unable to produce crops (i.e., pasturage). The grouping of land into classes is the next topic of discussion.

Classification of Public Lands. The second concept leading to the resolutions was the scientific classification of public lands. As Congress altered its perspective concerning the disposal of the public domain, it also changed its perspective concerning the administration of natural resources. There was a growing concern over the exploitation of natural resources. The debate is concerned about balancing the rights of individual capitalists and the concept of public interest and general welfare. This concern eventually became political and became a contributing factor in the legislation concerning waterpower and reservoir sites. During this discussion the term resources will include the concept that their value is dependent on their usefulness when needed and may include related resources reflecting man's influence on natural resources. In other terms, resource values may change over time, and cultivated crops and dams and reservoirs are related resources.

Individual concern over specific resources could be expected, but there was an increasing segment of society that wanted a more orderly growth for the nation. One such advocate was James Monroe, fifth President of the United States (U.S.), who invited Congress (December 1817) to consider anew the method of disposal of the public lands. "*The public lands had increased in value, and he believed that they should be disposed of to the best advantage of the Nation rather than permit capitalists who could buy up large blocks of land to amass the profits*" (Rabbitt, 1979, page 24). President Monroe's comment will be used as the original theme behind scientific classification.

Growth certainly involved the policy of disposal of public lands. The public lands were a resource that was being developed for the pubic welfare in the generation of revenue. The growth of the nation reflected the success of the land disposal policies, and the policies changed over time as the resource became more scarce and less valuable for agriculture. By 1879, a committee of the National academy of Sciences reported "*by far the larger part of the public*

*domain lies in the region where, from geological and climatic causes, the lands are for the most part not valuable to field culture, and where the system of homestead preemption and sale in accordance with existing laws is both impracticable and undesirable*" (Rabbitt, 1980, pages 2-3). The land disposal policy had dominated other resource policies until the mid-nineteenth century. However, other resources were not ignored and Congress debated their role in growth and the administration of their development.

A fundamental concept of the debate was that the resources belonged to the land. Without prerequisite conditions, the ownership of land related directly to ownership of the resources. Congress had passed land laws that reserved the land if the were valuable for resources other than agriculture. Other laws provided for the sale of lands with resources at prices that reflected the market value of the resources. Prior to homesteading, when auctions were held to sell land, the government had better control of the development of land resources. If the land was reserved, they would not be offered at auction, or the minimum bidding price reflected the reserved resource values. If they had unreserved resources, the government would make the resource value of the land known, in order to achieve higher bids for the land.

One flaw in the auction of land and its resources was the problem with the settlers who occupied land before the lands were surveyed and auctioned. They claimed preemption rights, and obtained the land at minimum prices. Without a meaningful survey, the settlers had more information about the lands resources than the land office and the government officials.
A second flaw that developed in the process was the practice of appointing political appointees as surveyors, who in turn, contracted the actual surveys. "*Many surveys were done carelessly, some indeed fraudulently, and were inaccurately marked by perishable or easily removable corners ...*" (Gates, 1970, page vii). This allowed for lands to be obtained as agriculture lands by fraudulent claimants for corporations interested in other resources. This problem of entering land as agriculture land fraudulently did not cease with the homestead laws. Valuable unoffered lands were settled as fast as lands offered for homestead. Speculators were monitoring land activities for clues concerning the resource value of land and gaining premature entry (often fraudulently) to the advantage of the speculators.

Another problem in the administration of lands with resource values concerned large blocks of land in the west had never been surveyed, were unsuitable for cropland and the government had no information concerning their existing potential. Several scientific explorations were commissioned to explore unmapped areas of the West and to find valuable resources. In an effort to manage these explorations and provide a semblance of efficiency, Congress turned to the National Academy of Sciences for recommendations for the exploration of the West.

The Report of the Committee of the National Academy of Sciences contains the following statement of the opinion of the Committee:

"*The best interests of the public domain require, for the purposes of intelligent administration, a thorough knowledge of its geologic structure, natural resources, and products. The domain embraces a vast mineral wealth in its soils, metals, salines, stones, clays, etc. To meet the requirements of existing laws; in the disposition of the agricultural, mineral, pastoral, timber, desert, and swamp lands, a thorough investigation and classification of the acreage of the public domain is imperatively demanded*" (Smith, 1913, page 11).

The Committee's recommendations led to a significant piece of legislation on March 3, 1879 (20 Stat., 394; 43 U.S.C. 31). This legislation called for the classification of the public lands by a single agency, the USGS. They were given the responsibility to examine geologic structure, mineral resources, and products of the national domain. On November 1, 1880, the first Director, Clarence King made the following statements concerning the classification of the land:

"*Two special and distinct branches of duty are imposed upon the Director of the Geological Survey--(1) the classification of the public land and (2) the examination of the geological structure and mineral resources.*

*As regards the classification of the public lands, the test of the law leases an uncertainty whether this classification is intended to be a scientific exposition of the kinds of lands embraced in the national domain, such as arable, irrigable, timber, desert, mineral, coal, iron, showing the practical values and adaptabilities of the various classes or kinds of soil and surface, or whether, on the other hand, it was intended to furnish n basis of classification upon which the Government should part title to portions of the public domain.* * * *

*Upon examination of the existing land system, I have assumed that Congress, in directing me to make a classification of the public lands, could not have intended to supersede the machinery of the Land Office and substitute a classification to be executed by another bureau of the Government without having distinctly provided for the necessary changes within the Land Office and adjustment of relations between the two bureaus.* * * *

*I have therefore concluded that the intention of Congress was to begin a rigid scientific classification of the lands of the national domain, not for purposes of aiding the machinery of the General Land Office by furnishing a basis of sale, but for the general information of the people of the country, and to produce a series of land maps which should show all those features upon which intelligent agriculturists, miners, engineers, and timbermen might hereafter base their operations, and which would obviously be of the highest value for all students of the political economy and resources of the United States. Studies of this sort, entirely aside from the administration of the Land Office, can be made of the highest practical value; and to this end a careful beginning has been made*" (Smith, 1913, page 12).

But there was another side to classification. The National Science's Committee had further recommended that "*The Land Office shall also call upon the United States Geological Survey for all information as to the value and classification of lands*" (Smith, 1913, page 11). Major Powell and the Academy of Sciences wanted administration of the land laws to be dependent on scientific evidence. This was an extension of the classification by the survey as called for in 1796, but with a scientific agency accomplishing the assessment of the land values. The interpretation of the original charge of the USGS changed when Major Powell became the second Director in 1881. Classification pertained to the identification of natural resources and the administration of the land policies pertaining to their development. The first objective was "*for the general information of the people of the country*," and the second purpose was a protection of the resource from disposal under inapplicable laws.

In the Act that created the USGS, was the creation of a Public Land Commission (20 Stat., 394) "*to codify existing land laws respecting survey and disposal, to recommend a system and standards for the classification of public lands, *** to draft a proposal for surveys adapted to the economic use of the various classes of land, and to make recommendations concerning the best method of disposing of the public lands to actual settlers.*" The results of the Commission were disappointing, but its charter for the survey of the economic use of lands, recommendation of the system and standards for classification, and recommendations for land disposal to settlers is certainly adds insight to the concerns of the times. It must be noted that Major Powell also served on the Public Land Commission, and may have influenced the charter.

In anticipation of the change to the Woodrow Wilson administration in January 1913, the Survey published Bulletin 537 entitled The Classification of the Public Lands in January 1913, to present "*a full statement of the policy of land classification and a detailed description of the procedure and methods so far found necessary to carry out that policy in the stage of development already reached*" (Rabbitt, 1986, page 139).

The following is the Bulletin's concise discussion of the meaning of classification, which although written much later still serves to verify the meaning of classification:

> "*With the most and the best of the Nation's land already alienated, the national duty is to put to its best use what remains. Utilization of lands for their greatest value necessitates the determination of that value, which is, briefly, land classification; and, to be adequate, land classification must be based upon first-hand acquaintance with the particular land under consideration. With a national estate including country ranging from salt-incrusted [sic] deserts to valleys knee-deep with nutritious grasses or giant forests almost impenetrable because of luxuriant undergrowth, no general statutes that may be enacted can be made so definite as not to require the exercise of well-informed judgment in their execution. To this end examination and classification of the public lands constitute an initial step in their disposition for development and settlement. That a*

*few decades ago settlement and development commonly outstripped classification and often far preceded even the legal disposition of the land itself is no good reason for failure to follow the more logical procedure now*" (Smith, 1913, pages 7-8).

"*A study of the land laws shows the absolute necessity of some form of segregation of the lands into classes as a prerequisite to their disposition. Agricultural entry may not be made on lands containing valuable minerals, nor coal entry on lands containing gold, silver, or copper; lands included in desert entries or selected under the Carey Act must be desert lands; enlarged-homestead lands must not be susceptible of successful irrigation; placer claims must not be taken for their timber value or their control of watercourses; and lands included in building-stone, petroleum, or salt placers must be more valuable for those minerals than for any other purpose. So through the whole scheme of American land laws runs the necessity for determining the use for which each tract is best fitted*" (Smith, 1913, page 32).

It should be noted that the scientific classification of the land had little or no precedent. The policy that the public lands shall be classified and that they shall be disposed of in accordance with their classification was novel. USGS Bulletin 537 recognized the significance with this statement: "*Scientists and public men of older countries have been outspoken in their interest in this new application of science to governmental administration, and requests have been made for more detailed information on the subject than is available in the references appearing in administrative reports of the Secretary of the Interior and his subordinates*" (Smith, 1913, pages 8-9).

The passage of the Joint Resolution of March 20, 1888, and the Senate Resolution of March 27, 1888, extended the scientific classification of lands to the investigation of reservoir sites.

Agricultural Circumstances. The balancing of land disposal for homesteading with the classification of natural resources was also influenced by nature. The third factor influencing the timing of the Joint Resolutions was the adversarial climate circumstances to the agriculture industry.

The sale of land to speculators took the government out of the responsibility for further development. Even cash sales to homesteaders were intended to be final. However, allowing free entry to land for family residence left the government with political responsibility. The Homestead Act required the homesteader to establish a residence on his land and to reside thereupon for a period of five years. "*No definite amount of cultivation was required, but the building of houses and barns and the cultivation of a part or all of the area were regarded as evidence of the good faith of the entryman in entering the land for the purpose of building a home for himself, this being the fundamental object of the homestead act*" (Smith, 1913, page 20). One of the problems associated with the emphasis on homesteading was the necessity of water for its success.

The Homestead Act of 1862 followed and triggered a dramatic change in the West. "*For several decades following passage of the homestead act settlers in search of their own land moved westward into increasingly arid areas.*"

> '*The breaking wave of settlement was eating up half a meridian a year; from one season to the next, settlements were thirty miles farther out. By the late 1870s, the hundredth meridian had been fatefully crossed. There were homes sprouting in central Nebraska, miles from water, trees, and neighbors, their occupants living in dugouts suggestive of termite mounds.*'

"*In addition to the prospect of free land, settlers were encouraged by the lure of flat, treeless, rich soils; by what proved to be a period of above average rainfall in the semiarid plains; and by a melange of promoters (especially from the railroads and local newspapers) who sought to profit from the settlers. A new school of meteorology emerged with the motto, "Rain follows the plow*" (Frederick, 1991, page 29). The movement into more arid areas, and the myth of making rain was setting many homesteaders up for failure.

It was recognized that parts of the country was not inhabitable without irrigation. On March 3, 1877, Congress allowed the sale of desert lands susceptible to irrigation (19 Stat., 377). Those lands that could be irrigated were developed with private capital in the next few years.

Major Powell submitted his report on the Arid Region in 1878 which advocated the classification of agricultural lands. He had warned that much of the arid region would not sustain grain production. Successful homesteading of the remaining agricultural lands needed the identification of supplemental water sources including reservoirs. Powell advocated that land disposal procedures should be modified on a scientific base and water resources should be protected and developed for the public benefit.

Robert Follansbee, wrote an history of the Water Resources branch in commemoration of its 50th anniversary in 1938. His explanation of Powell's influence on the Joint resolutions is included:

> "*During the eighties, when Powell was pressing for national aid for irrigation, conditions were ripening for action by the Congress. Irrigation development had reached a nearly static stage as the settlers in the arid region had irrigated nearly all land within easy reach of the streams and, in most places, had utilized fully the natural flow of the streams during the irrigation season. Therefore, any considerable extension of irrigation involved storage in large reservoirs, the reclamation of lands remote from streams, and the use of funds far beyond the ability of settlers to provide even when acting collectively*" (Follansbee, 1938, page 32).

Powell's predictions that the land would not sustain crop production was sadly true:

> *"Then in 1886, for the first time in several years, rainfall on the Great Plains was inadequate for farming and crops were a failure. During the following winter, blizzards and ice storms devastated the cattle ranches. The drought continued, and a series of crop failures together with declining prices dealt the farmers west of the 97th meridian crushing blows. Many soon realized that their land was worth less than the mortgages and let the loan companies foreclose, and large areas of the plains from Kansas northward became almost depopulated as farm families moved back east"* (Rabbitt, 1980, page 10).

Congress was faced with a necessity of change. Senator Stewart returned to the Senate in the late 1800's after an absence of 12 years. His return and the support he offered to national irrigation legislation seemed to shift the balance. The initial charge of the Joint Resolution was limited to investigate the practicability of the government constructing reservoirs. However, in the Senate where Senator Stewart had more influence, the Resolution added classification of the lands and an actual choice of reservoirs. This had to be done to calculate the actual economics, but it set a precedent of the preliminary selection of sites that would be constructed.

Summary. This completes the discussion of the concepts contributing to the passage of the Joint Resolution of March 20, 1888, and the Senate Resolution of March 27, 1888. These resolutions directed the Secretary of the Interior by means of the Director of the USGS to investigate the practicability of constructing reservoirs for the storage of water in the arid region of the U.S., find the necessary reservoirs, and to report to Congress.

In Summary, Congress, in passing the Joint Resolution, was following a definite trend pushing them for action. Congress had succumbed to the political forces wanting homesteading and the individual family farm. Major Powell was warning that the administration of the homestead laws needed scientific soil, water, and climate information for successful administration. All previous attempts for assistance to the homesteaders failed to prepare them for the national catastrophe of the 1886-1888 drought. Pressure was building for the government to build reservoirs as a possible solution from such advocates as Senator Stewart from Nevada. Congress was clearly aware of the importance of reservoirs for the successful irrigation of the West, but was reluctant to commit the government to construction. Congress decided to seek scientific information for further deliberations. This legislation did not halt the push for action.

The Senate Resolution was more specific about what was needed from the Geological Survey, including the locations of potential reservoirs that needed construction and classification of the lands.

The reservoir sites discussed in this section of this manuscript were economically valuable for the irrigation of agriculture land. However, the easy irrigation developments had been developed or started and the remaining potential were complex and needed special funding and organization

considerations. The advocate, Major Powell, was clear that in his opinion the sites should be built by the private sector, although he changed his mind later. But his scheme of thought is interesting, taken from the perspective of "ecosystem management. "*On January 21, [1889], he proposed to them a bill of his own, the "theory" of which, he said, was that "there are natural hydrographic basins or drainage areas; that the people of each of these districts should be organized into bodies corporate and politic and constitute commonwealths for the regulation of irrigation, the division of waters, the protection of forests, the protection of the pasturage lands, and for the utilization of all of these values*" (Rabbitt, 1980, page 167-168).

Congress continued immediately the following October in the formulation of policy for reservoir sites. Funding for the new "Irrigation Survey" was provided, and the October 2, 1888 Act also included means to keep the sites in Federal ownership. Because of the retention clause in the Act, it is discussed further under the heading National Ownership.

**Waterpower Sites.**

The Act of February 15, 1901 (Chapter 372, 31 Stat., 790), provoked the classification of lands for waterpower purposes. Although the Act does not charge the Secretary to classify lands, the authorization and empowerment to permit "use" of rights-of-way prompted the investigation of the location of the right-of-way. Pertinent events culminating in the legislation include a change in public land use including the right-of-way definition, necessary information for waterpower classification, and recognition of the significance of waterpower.

Public Land Retention and Use. Concepts of the change in public land disposal and protection of resources from inappropriate disposal have been introduced. Concurrent with the change in selling land for revenue was a change in subsidizing internal improvements by land grants. Slowly Congress was developing a policy of retaining the remaining lands with resource values for the public interest and general welfare.

The resource of land was recognized as valuable as a source of revenue but had to be sold before the revenue was realized. When land was plentiful and there was a shortage of cash, it was easy to offer land as an incentive in lieu of cash. An example was when Congress offered land as an incentive or payment for solders who would serve in the army or navy. But the land disposal policies change as situations change and this practice was stopped. The last legislation offering military pay by means of land was on September 28, 1850 (Chapter 84, 14 Stat. 521; R.S. 2478; 43 U.S.C. 1201).

Another example of utilizing the land resource as revenue was the granting public domain land to States as a source of revenue. This policy was ratified as part of the 1785 Land Ordinance, and began on April 30, 1802 when Ohio was admitted to Statehood. All subsequent States have received land as a source of economic base with their admittance to statehood.

After the House Committee on internal improvements in 1818 stated that the Congress has the power to construct roads and canals, congress started making grants to States to aid internal improvements. Between 1823 and 1869, Congress passed 55 grants in aid of roads, canals, improvement of navigation, river improvement, Railroad rights-of-way, railroad construction, railroad and telegraph lines, wagon roads, and military roads.

In the progression of internal improvement policy, there was a period of time that Congress made grants directly to the private corporations. Beginning in 1852, Congress made grants to corporations for rights-of-way, telegraph lines, aid for the construction of railroad and telegraph lines and even a dry-dock as an incentive for development. Eight of these grants were to railroad corporations stimulating construction of needed railroads. These eight grants gave the corporations land to be sold for revenue. The original grant was to the Union Pacific-Central Pacific on July 1, 1862, and the last was to the Texas Pacific Railroad Company on March 3, 1871. These grants contained clauses that in the event of failure the lands would revert back to the Federal government. A familiar case was the grant to the California and Oregon Railroad Company of July 25, 1866 (14 stat., 239). This act called for the lands to be sold to settlers. The Railroad violated the terms of the grant, and was not selling its land to actual settlers. The Attorney General brought suit and the government won the case and the lands were revested to the U.S.. The case is familiar in conjunction with waterpower because a specific Act of June 9, 1916 (39 Stat.,219) authorized the Secretary of the Interior to classify the waterpower sites on the revested lands.

However, most Congressional grants for internal improvements prior to 1900 were for the land use. The land use policy evolution began in 1852 and was still in progress in 1901, with the passage of the subject Act of February 15, 1901. In granting land, it started with stipulations such as

> "*That if any road, at any time after its completion, be discontinued or abandoned by said company or companies, the grants hereby made shall cease and determine, and said lands hereby granted, revert back to the general government*" (Act of August 4, 1852, Chapter 80, 10 Stat., 28).

Later a new phrase was introduced:

> "SEC. 5. ..., *and if said road is not completed within ten years, no further sales shall be made, and the land unsold shall revert to the United States*" (February 9, 1853, Chapter 59, 10 Stat., 155).

In 1868 one of the right-of-way acts introduced the phrase

> "*Provided, That if the said company shall nor construct, within one year from the passage of this act, ... then, and in that case, a like privilege is hereby conferred upon any other company that shall construct a railway between said cities*" (July 27, 1868, Chapter 268, 15 Stat., 238).

It seems that the philosophy concerning lands for internal improvements was changing; initially the most activity in land grants was to States, then to corporations including land for revenue, then to corporations with reversionary clauses, then to unnamed development companies. Land no longer was being given, but was retained with public uses of the land being preferred.

The administration of land use policy was confined to only the lands occupied. This required exact locations and the land was not conveyed until maps of the actual construction were submitted (these maps are called as-built maps). Originally, if lands were settled between the time of grant and the final location, in lieu lands were granted. By the time of the Act of July 4, 1862 (12 Stat., 489-93), the Secretary of the Interior was authorized to reserve lands to be granted.

Waterpower and reservoir sites are internal improvements and Congress has not excluded them in the evolving policy of grants for subsidizing development. They do not have a history of grants, but appear in history about the time that policy had progressed to land use. Many sites have been constructed under the provisions of rights-of-way, and actually, the government has constructed many of the facilities after the turn of the century.

The original specific right-of-way for private development of waterpower sites was on June 12, 1866 (14 Stat., 64), to the Humbolt Canal Company. It incorporates much of the philosophy of rights-of-way already discussed. The canal right-of-way includes the right to flood public lands by means of a reservoir, locating mill sites, clauses that the land grant will not occur until the submission of as-built drawings, and a reversionary clause.

The corporations developing the mines in the mining camps in California developed dams, reservoirs, and canals on public land without previous authorization. Waterpower in the form of hydraulic mining was used. At times the streams were dewatered, and canals were used to convey unwanted water. Somewhat after the fact, a general right-of-way act was passed on July 26, 1866 (Chapter 262, 14 Stat. 253; R.S. 2339 and R.S. 2477).

A general right-of-way act was passed on March 3, 1891, for ditches, canals, and reservoirs for irrigation purposes. In 1894 a Interior Land Decision determined that using this act for hydroelectric purposes was inappropriate (18 L.D. 573). Soon this act was amended to add Section 2, which states:

> "*That the rights of way for ditches, canals, and reservoirs ... may be used for purposes of water transportation, for domestic purposes, or for the development of power, as subsidiary to the main purpose of irrigation*" (Act of May 11, 1898, Chapter 292, 30 Stat., 404).

This still did not allow the development of waterpower without the development being part of an irrigation project. The Act of February 15, 1901, continued to be necessary. However, after this new Right-Of-Way Act was passed, debates continued about whether construction

under its provisions was satisfactory. One outspoken opponent was George Otis Smith, Director of the USGS (1907-1930). It was his opinion that the gist of the land use policy practice, whether outright land grants or land use by a rights-of-way across the public domain "*is either in perpetuity or is revocable in the discretion of the Secretary of the Interior.*" He continued to explain and to offer a recommendation of a better policy:

> "*Both of these conditions are undesirable--the first because the resource passes forever beyond the direct control of the public, which thus becomes powerless to guard against misuse, disuse, or monopoly; the second because the capital which is required in the construction of such enterprises is not sufficiently protected. Between the grant in perpetuity, which inadequately protects the public, and the revocable permit, which inadequately protects the capital invested, lies the lease, which adequately protects both. By leasing rights of way for a fixed period of years absolute control would periodically return to the public, while the investor would be secure for a period long enough for his investment to return a profit.*" (Smith, 1913, page 49)

The recommendation of a leasing policy became a reality for waterpower and is discussed further as part of the section titled "Administration Legislation, Leasing" on page 55.

Waterpower Resources. As the technology of generation and transmission of hydroelectricity developed, the use of waterpower became free from having to be located at "mill seats." Generation facilities could be located at the water drops, and the electricity transmitted to mills, factories, and communities located at more convenient sites. The advancing technology and the convenience of waterpower rather than coal or other resources to generate electricity caused more demand for waterpower.

The first steam-driven central station was the Edison Pearl Street lighting plant in New York, which began on September 4, 1882. The first water power electric lighting system is claimed by the Appleton Gas Light Company, Appleton, Wisconsin. After a false start on September 27, 1882, the successful start was made September 30, 1882. Other public hydroelectric generating plants went into operation in 1882 at Niagara Falls in New York and at St. Anthony Falls in Minnesota. "*Hydroelectric power use grew rapidly in the following decades, and by the end of the nineteenth century it accounted for a large portion of the total electricity produced in the United States*" (Frederick, 1991, page 31).

In the USGS, a change in organization and emphasis was started in 1895. Field work was started on a general reconnaissance to obtain information on methods of utilizing water supplies for power, irrigation, or domestic purposes. "... *work was started in Virginia and North Carolina as the beginning of a systematic examination of waterpower in the Appalachian area, and preliminary work was begun in anticipation of an investigation of rivers in the New England States. Resident hydrographers were employed for some of the river gaging, and much of it in the East was placed in charge of Professor D.C. Humphreys of Lexington, Virginia, and Professor J. A. Holmes, the State Geologist of North Carolina*" (Rabbitt, 1980, page 256).

A single person must be recognized: Frederick H. Newell. Mr. Newell was instrumental in the USGS's authorization to continue the search for reservoir sites and was placed in charge of the Hydrography Section in 1894. The change in organization in 1895 was that the section was transferred to the Geologic Branch. He led the investigation for utilizing water supply and the section started the river surveys. He was part of the second Land Law Commission. In 1902 the responsibility for the Reclamation Service was given to Newell and he led the new Hydrographic Branch. On March 9, 1907, just two days after his appointment, Secretary of the Interior James Garfield appointed Newell the second Director of the Bureau of Reclamation and separated it from the USGS. Newell was part of the Inland Waterways Commission established on March 14, 1907. The commission's report advocated the multiple-purpose use of dams, including waterpower. In 1908, Newell's Bureau of Reclamation provided the staffing for Secretary of the Interior Garfield to withdraw almost four million acres in waterpower withdrawals. Newell seems to be very influential in the early recognition of waterpower values.

Considering that Newell was in charge of both the Hydrographic Section and the Reclamation Service, it was appropriate that waterpower was incorporated into Reclamation projects. It was initially used to power sawmills, concrete plants, cableways, hoists, giant shovels, and draglines. Waterpower eventually powered lights that facilitated round-the-clock operations at some damsites. By the Act of April 16, 1906 (34 Stat., 116), the Secretary of the Interior was authorized to "lease" surplus power or power privilege and contribute the monies into the Reclamation fund.

The rising importance of waterpower is acknowledged in statements of President Theodore Roosevelt in messages to Congress during 1908 and 1909 where he called attention to the danger of an uncontrolled monopoly of a water-power development and to the desirability of preventing - power sites on the public domain from falling into the hands of speculators and monopolists.

The Act of February 15, 1901, reflects the changing land retention policy to one of land use. However, land use policy was still developing and our understanding of historical rights-of-way prevents the understanding of why the Act caused activity for classification. Waterpower sites were not to be granted to developers; they were allowed use of the necessary lands. A policy had already been established to classify land as to their economic values for the general information of the people of the country.

At the time of the Act of February 15, 1901, waterpower was being recognized as a resource. The waterpower technology was improving and State and public interest in the resource was accelerating. The administration changed very soon after passage of the Act and was very oriented to the protection of resources for the public interest and general welfare. Initial protection of the resource happened administratively, and certainly started immediately. By 1907 the concern was protection of the resource from exploiters and monopolists. By 1908 these sites started receiving formal withdrawal protection. This will be discussed further in the section titled "National Ownership, Administration and Waterpower Sites, Temporary Power Site Reserves" on page 45.

In retrospect, the Act of February 15, 1901, and the simultaneous introduction of a new administration interested in the protection of resources was the stimulus for the USGS to classify the waterpower sites. The waterpower classification was an inventory and assessment of waterpower potential for the information of the public and the informed administration of the public lands.

Waterpower Classification. Originally, waterpower sites were different than the irrigation reservoir sites. The reservoir sites were dams with unique storage basins sought out in relation to irrigable land. Waterpower sites were the mill seats defined earlier as "locations where water drops could be utilized by water wheels for mechanical mills." The advances of the technology of hydroelectricity (the generation and transmission of electricity) by 1900 allowed development of these sites remotely from the application of the power.

Waterpower is the result of water falling. Its value is calculated by the amount of water and the distance the water drops. The information that is necessary for locating valuable waterpower sites includes the streamflow and the "head" (distance the water drops). The USGS was already gaging streams which was furnishing the necessary streamflow. The USGS only needed to make a profile of the rivers to determine the head in order to have the necessary information to classify waterpower sites. They started by simply measuring distance and drop down the rivers as a "line" survey. But shortly the line surveys developed into a more comprehensive, complete survey that resulted in a map comparable to a topographic survey.

River surveys were initiated as early as 1897, although not paid for by the USGS. They were conducted by a part time employee, Professor D.C. Humphreys, and the USGS published the results. Starting in 1900 the USGS began making river surveys in cooperation with the State of Georgia. Other cooperative agreements were made and during the next decade large portions of the rivers of the U.S. were surveyed, helped with funding from the states.

By 1903 they were being accomplished in cooperation with the Topographic Branch, responsible for map surveying. The survey showed the profile and course of the river, detailed topography of the bank, and was published as maps showing plan, profile, and contours along the stream. "*In addition, possible reservoir sites, chiefly ponds and lakes, were surveyed in sufficient detail to permit storage studies to be made*" (Follansbee, 1938, page 145).

Note that by this time in history the practical differences in waterpower sites and reservoir sites were becoming confusing. The river surveys made for waterpower sites were including reservoir sites. On the other hand, the construction of reservoirs by the new Reclamation Division (later to become the Bureau of Reclamation) had found the benefits of producing waterpower at reservoirs. This will be discussed later. Now it is sufficient to understand only that waterpower was originally considered different and as the technology of hydroelectricity improved this resource became more valuable.

The significance of the waterpower classification events is that the Secretary of the Interior now had specific scientific locations of the potential sites. The professional procedures of making the river surveys were soon completed, making them timely and valuable. The cooperative agreements with the State governments flourished for the next several years because of the growing popularity of and interest in waterpower.

**Multi-purpose Sites.**

The initiation of identification of reservoir and waterpower sites began independently. The mill seats started first with irrigation reservoirs following almost a century later. However, the development of hydroelectric technology allowed an entirely different freedom for the location of the use of waterpower. It was discovered that the development of reservoirs created the economic opportunity for hydroelectricity. Physically there are economic waterpower sites that are not reservoirs, but almost every reservoir development offers waterpower opportunities. The economic concept that good planning should consider all of the benefits of every site was recognized early and formalized by the Inland Waterway Commission.

The Inland Waterway Commission that was established May 14, 1908, initially focused on the Mississippi River. This was the result of the direction given by President Roosevelt. "*He proposed that the National Government undertake the development of the great river systems as national water highways, first the Mississippi and its tributaries and then the Columbia. Other water uses should be part of the general plan for development of the waterways; Government dams, for example, should be used to produce power as well as to improve navigation, and the creation of deep waterways along the Mississippi could include the building of levees that, with control of the headwaters, would end the threat of floods in the delta region*" (Rabbitt, 1986, page 70). "*In creating the Commission, Roosevelt stated that control of navigable waterways by the Federal Government carried with it corresponding responsibilities and obligations.*

> "*Our inland waterways as a whole have thus far received scant attention. It is becoming clear that our streams should be considered and conserved as great natural resources. Works designed to control our waterways have thus far usually been undertaken for a single purpose, such as the improvement of navigation, the development of power, the irrigation of arid lands, the protection of lowlands from floods, or to supply water for domestic and manufacturing purposes. While the rights of the people to these and similar uses of water must be respected, the time has come for merging local projects and uses of the inland waters in a comprehensive plan designed for the benefit of the entire country*" (Rabbitt, 1986, page 69).

The Commission therefore recommended that:

> "*Hereafter plans for the improvement of navigation in inland waterways, or for any use of these waterways in connection with interstate commerce, shall take account of the purification of the waters, the development of power, the control of floods, the*

*reclamation of lands by irrigation and drainage, and all other uses of the waters or benefits to be derived from their control*" (Rabbitt, 1986, page 71).

The multi-purpose sites are a combination of reservoir sites, waterpower sites, navigation, and flood control sites. Historically, the reservoir and waterpower sites were the responsibility of the Department of the Interior, while navigation and flood control were Department of the Army's responsibility. The competition between government departments has kept the true multiple purpose sites from becoming a reality, but will not be discussed further. The multi-purpose site was established as a goal by the Inland Waterways Commission. It was adopted by a "Conference of Governors" held at the White House on May 13-15, 1908. It still makes sense, and is considered policy by the Department of the Interior.

Currently, there are several waterpower and reservoir developments being released to new operation schemes every year. They are being freed from generating revenue to pay their construction debt. Without the construction obligation requiring pre-established revenue, new operation schemes are available. New operation schedules can make this policy multi-purpose more realistic by considering all public demands.

One closing comment: All of the inventory and assessment of potential multi-purpose sites that have been described are the responsibility of the Secretary of the Interior. They began as the responsibility of the USGS, but are now the responsibility of the BLM.

**NATIONAL OWNERSHIP.**

One important piece of the national policy is that of ownership. The government, reflected in legislation, changed land policies dramatically by the late nineteenth century. The priority of selling large tracts of land for revenue had given way for homesteading by individuals. The grants of land for internal developments was seemingly replaced by the priority of granting "land use." The concern was growing over the wise use of resources for all of the people. The time had come in 1888 for legislation retaining ownership of reservoir sites to the U.S.. This was followed by 20 other acts calling for the investigation and retention of waterpower and reservoir resources.

After the Joint Resolution of March 20, 1888, and the resulting Senate resolution of March 27, 1888, Congress needed to fund the endeavor. The following fall the Joint Resolution was given credibility in the appropriations Act of October 2, 1888 (25 Stat. 526; 43 U.S.C. 662 [1964]). This appropriations bill stepped beyond normal procedure and, to prevent speculation, withdrew all irrigable lands from being homesteaded by settlers until the survey could be completed. The Act states:

"*For the purpose of investigating the extent to which the arid region of the United States can be redeemed by irrigation, and the segregation of the irrigable lands in such arid region, and for the selection of sites for reservoirs and other hydraulic works*

*necessary for the storage and utilization of water for irrigation and the prevention of floods and overflows, and to make the necessary maps, ... And the lands which may hereafter be designated or selected by such United States surveys for sites for reservoirs, ditches or canals for irrigation purposes and all the lands made susceptible of irrigation by such reservoirs, ditches or canals are from this time henceforth hereby reserved from sale as the property of the United States, and shall not be subject after the passage of this act, to entry, settlement, or occupation until further provided by law:*

*Provided: That the President may at any time in his discretion by proclamation open any portion or all of the lands reserved by this provision to settlement under the homestead laws."*

Like the first topic of the identification of waterpower and reservoir sites, several issues must be explained for understanding this new withdrawal policy: (1) Normal retention of land for resources that Congress has practiced since 1796, (2) A new emphasis that was being placed on what property was to be retained by the U.S., (3) The reservoir resources, and, (4) Subsequent legislation that repealed this act and further policy modifications.

**Reservation of Land.**

Congressional legislation following fluctuations of public opinion has been shown earlier with the land sales-homesteading and land grant-land use discussions. This changing has also been true in an area labeled "reservation" of the land, which actually is the "retention" of land. The term reservation has been chosen because it is the term used in most of the legislation.

The topic encompasses a period of time when the Congress had to wrestle with a "hands off" policy that had to be changed to a more active role in order to protect the interest of the Nation. The debate centered on balancing individual rights against the public interest and general welfare. Congress made reservations, grants, rights-of-way, classifications, and withdrawals as they experimented with possible solutions. The reservations were difficult to patrol and to control trespass, but eventually it was recognized as an enforcement problem, not a policy problem.

For this discussion several types of resources legislation has been chosen as examples and are presented in chronological order. It is suggested that the experience that the government had with one resource policy influenced the policy regarding other resources.

Early Minerals. Originally, minerals were given with the land. The Land Ordinance of May 20, 1785, contains this reference to minerals:

*"There shall be reserved ... one third part of all gold, silver, lead, and copper mines, to be sold, or otherwise disposed of as Congress shall hereafter direct"* (Gates, 1979, page 701).

England and prior land grants in the colonies had contained outright grants of minerals within the land grant charters. But things were different in the colonies and the new nation. It has already been mentioned that Congress has held interest in the value of land since instructing the Surveyors to officially note "*mines, salt licks, salt springs, and mill seats which come to his knowledge; all watercourses over which the line he runs may pass; and also the quality of the lands.*" This language is in the Act of May 18, 1786, which also contains provisions that "*That a salt spring lying upon a creek which empties into the Sciota river, on the east side, *** and every other salt spring which may be discovered, together with the section of one mile square which includes it, *** shall be reserved, for the future disposal of the United States*" (1 Stat., 466). The policy was to sell the land as a revenue source, and the resident resources were often classified because they made the land values higher. There was a reservation to hold land for the purpose of future disposal. Congress also retained resources for the common defense including lead and timber.

Timber Reserves. The next developed resource policy was a debate between individual capitalism and the common defence. For a period of time, Oak and Cedar timber's value was higher because of its usefulness in wooden navy vessels. The resource value has since changed, but Congress would have to react to the circumstances at the time.

Wooded timber lands had to be cleared for agricultural purposes in the early migration east of the Mississippi. Over the decades, timber was often considered a nuisance and burned for disposal. In homesteading the western prairie lands, timber was easily stolen from adjacent public land. Large timber companies were difficult to control, because they easily harvested on adjoining lands, often without penalty. The timber resources of the U.S. were exploited. A pattern was emerging that barring protection, the timber resources needed for the military were disappearing.

> "*At the same time, however, Congress took steps to manage some of the natural resources of the public domain. John Adams' administration was troubled by the possibility of war with France, and the Department of the Navy was established to help "provide for the common defence." Live oak and red cedar were then the most suitable woods for naval vessels, so Congress in 1799 set aside for the use of the Navy the live oak and red cedar lands*" (Rabbitt, 1979, page 18).

Another timber resource was white pine and live oak, which forested the southern coast from South Carolina to the Spanish-held Louisiana. It took 57 acres to produce 2,000 such trees to build one ship. Congress actually purchased 1,950 acres from private holdings in Georgia to boost its reserves.

After the Louisiana Purchase, the Secretary of the Navy was instructed to explore the live oak and red cedar forests acquired with the purchase and to select tracts to satisfy the requirements of the Navy. "*Agents were appointed both to select the desired tracts and to protect them from trespass*" (Rabbitt, 1979, page 23).

The Act of February 23, 1822 (Chapter 9, 3 Stat., 651), authorized the use of Federal force to protect the forested land in the newly acquired east and west Florida. The government undertook an experiment to grow oak trees in Florida between 1828 and 1830. "*In 1827 the President was empowered to reserve live oak timber anywhere on public domain, ...*" (Miller, 1973, page 68).

The reservation of timber resources was against the "hands off" policy, and was very difficult to enforce. Trespass had been tolerated since the colonial days and timber resources were abundant. It is suggested that these experiences contributed to a later policy that resources must be protected from trespass and exploitation.

Lead Mine Experiments. Another experiment in the development of resource policy for the balancing of capitalism and the common welfare and common defence involved leasing of lead resources. Lead was needed for military purposes as well as the wood. It started with the Louisiana Purchase in 1802.

> "*The Louisiana Purchase involved the Federal Government in mineral-land problems, for lead was already being mined in Missouri under Spanish and French grants. Even though the mines were private, the Ordinance of 1785 stated that one-third part of all lead mines was reserved to the United States*" (Rabbitt, 1979, page 20).

The grants of the mines to individuals by the Spanish and French governments were honored, leaving the mines in private ownership.

An experiment was conducted beginning in 1807. The lead mines in Indiana were reserved from future disposal and leased. The Act of March 3, 1807 (2 Stat., 448) was aimed at gaining revenue but the experiment ended in failure.

The provisions of the Act of 1807 were applied to Missouri, but the experiment failed because of the proximity of offered land to the successful mines on private land. Miners were unwilling to lease the mines when others could obtain ownership of their mines. The administration of the leases exceeded the revenues gained. The government authorized the selling of the leased mines on March 3, 1829 (4 Stat., 364).

One experiment that did show some promise was at a mining area referred to as the Upper Mississippi, Galena, or Feather River Mines. Without the problem of envy of mine owners being land owners and the selection of Lt. Martin Thompson as supervisor, this experiment was conducted differently. Thomas received permission for changes, established government-owned smelters, issued digging permits, and made a successful operation for a short period of time. A depression, opening of land to agriculture, laxness of administration, and a new land office allowing patent to mineral land killed the success of the operation and it was abandoned in 1846 (9 Stat., 37) with Congress authorizing the sale of the mines.

Over the next couple of decades the failure of the lead leasing experiment was cited in the arguments over public policy. In retrospect the failure was in part due to the problem of a uniform policy requiring revenue for the government. In essence leasing was competing with private ownership. The public wanted private ownership and to keep the government's "hands off." This attitude may have contributed to the exploitation of other minerals in the mining camp experience.

The leasing "failure" was followed by two legislative actions in 1847 reverting back to selling the land with mineral resources. The experiment failed because of the double-minded policy, but did provide good experience that would be used in future leasing development.

Mining Camp Experiences. What followed in history was roughly fifteen years of mineral policy debate in Congress while the "gold rushes" of the middle of the century stripped the country of its precious minerals. The policy of selling the precious mineral resources with the land failed. The resources were being stripped by legal trespassers and even the military would not get involved to bring order. There was no way to enforce the reserve of one-third of the mines. Neither the public interest nor the common welfare was served. The next act passed was the Right-Of-Way Act for Ditches and Canal Owners on July 26, 1866 (14 Stat., 253), that legalized the improvements that were made by the survivor companies. It wasn't until 1872 that the land question was solved.

The mining camps of the mid-century were of a very curious nature. As the topic pertains to the purpose of reservation of land for resource purposes, the following statement applies: The absence of pre-established Federal policy made it possible for trespassers to loot huge quantities of valuable minerals. The only law was "mining camp" law established internally for self preservation.

The California gold rush began in January 1848. In 1859 the rush was on to Pikes Peak, Colorado, and the Sierra Nevadas, Nevada. The Fraser River rush in British Columbia occurred in 1858. Gold was discovered in Montana and Arizona in 1863. The last placer rush began in Deadwood, South Dakota, in 1875. Historian Paul Gates describes the Deadwood as "*one of the most lawless mining districts in American history*" (Gates, 1979, page 711).

The myth of California placer mining history is that the industry evolved through technology. "*Pan and rocker presumably gave way to long toms, sluices, and eventually large-scale hydraulic operations*" (Pisani, 1992, page 14). Actually, all phases could have been occurring simultaneously, as more individual miners moved into the competition. Without law, competition was deadly and involved water resources as well as mineral claims. The original finds along the streams had water to work the claims. Later arrivals needed water sources and the competition was initiated. There were suspicions that the stream beds were the source of the gold and extensive hydraulic works, including dams and flumes, were built to dewater the streams. Fears existed that others would use water from the flume and take even the water necessary for working the claims.

But the water works lead to hydraulic mining. Historians give credit to Edward E. Mattison for founding modern hydraulic mining in 1853. "*Rawhide quickly gave way to canvas, tin replaced wood, and by the late 1850's iron pipe supplanted many of the hoses*" (Pisani, 1992, page 17). In turn the value of water increased and capital was invested in dams, canals and hydraulic works. "*By 1870 nearly seven thousand miles of main and secondary ditches moved water to claims*" (Pisani, 1992, page 18). In Nevada, the Milton Mining and Water Company built three dams--the largest 125 feet, and a ditch 80 miles long. "*In Butte County, the Spring Valley Canal and Mining Company secured eleven thousand acres of mineral land at a cost of $240,527 and invested over $1 million in an elaborate and highly profitable water system*" (Pisani, 1992, page 19).

Some agricultural endeavors were started to supply fresh fruits and vegetables to the miners working in the mining camps, utilizing the water, dams, and canals.

The devastation as a result of rampant trespass and exploitation has not been well documented, but the evidence remains. Many river beds in the West still show the unhealed gravel piles dredged during exploration and extraction. Hillsides remain denuded from having the topsoil removed during hydraulic mining. The richest precious metals were removed from public property without regard to the government or the public.

After the fact, Congress eventually started making policy. It started with a meek statement that all mineral lands are reserved from sale, except as directed by law (July 4, 1866, 14 Stat., 86). The second legislative attempt was the Right-Of-Way Act 22 days later. This Act included the provision that mining property could be granted to the developer. The ditches and canals were granted to the developers. Congress attempted to straighten the mess out by bowing to public pressure. They gave the land to the trespassers without penalty. In essence, the value of mineral resources was recognized as being higher than the value of land, and the developments were privatized.

The Placer Law, which was approved July 9, 1870 (16 Stat., 217), allowed for the purchase of the land associated with the placer claim. Similarly, the 1872 mining Act has the provision for purchasing the land associated with the claim. The act of May 10, 1872 (17 Stat., 91, R.S 2319), further provides that:

> "*all valuable mineral deposits in lands belonging to the United States, both surveyed and unsurveyed, are hereby declared to be free and open to exploration and purchase, *** by citizens of the United States and those who have declared their intention to become such.*"

The concern over the protection of resources from improper disposal escalated after the Civil War. It may be as a direct result of homesteading or the mining experiences. The land laws were not working to protect resources. It is suggested that failure of existing policy during the "mining camps" contributed largely to the concerns over exploitation of the resources and an anti-monopoly sentiment.

Congress next commissioned the exploration of the West for geologic reasons. Land containing mineral resources are subject to disposal based on the mineral value. The gold rushes had allowed exploitation without government control and fraud was common. The solution was to find the potential mineral deposits by the government for an orderly and controlled development. The minerals were established as the most valuable resource over homesteading, and the mineral land could still be sold to the claimant.

**Property of the United States.**

Several State governments formed a new government on March 2, 1781, and its Congress assumed the title "*The United States in Congress Assembled*" (Rabbitt, 1979, page 13). The original States retained ownership of their land, but donated their interest in their territories to the U.S.. When the Constitution was ratified on September 13, 1789, it contained the following statement from Article IV, Section 3:

> "*The Congress shall have power to dispose of and make all needful rules and regulations respecting the territory or other property belonging to the United States*; ..."

Obviously all of the cessions from the original States and the future acquired lands belonged to the U.S. However, by 1888 the government felt that it must somehow reserve title to property that it did not want to pass out of Federal ownership. The boundaries of the U.S. were stable, and homesteading and mineral exploration were developing the nation. The private enterprize system was working, but a concern was raised that it was working too well. Corporations and the family farmer were developing the West. Lands were being gobbled up and resources developed boosting the overall economy. But the concern was growing that the lands were disposed of without regard to their highest and best use. Classification was instituted. There was a trend to reserve land from sale or settlement for the public interest. And there was an anti monopoly sentiment evolving from greedy exploitation of the natural resources.

Whether the concern over resources came from fraudulent development rights under the agricultural disposal or mineral exploitation without regard to the land laws, the concern was growing in all areas. Following are examples of the developing policy of retaining land in Federal ownership.

Hot Springs Leasing. In the development of policy to retain property for the public interest Congress had to balance the individual rights of capitalist with public welfare. An interesting example of the developing policy pertains to the retention of the Hot Springs in Arkansas.

Historians have stated that Americans began traveling around the late 1820s:

> "*... for reasons of health, to satisfy their curiosity about natural history and geology, or to enjoy the scenery. Travel as a restorative of health or as escape from*

*summer heat and communicable diseases in crowded cities had begun in 1820s. Resorts beside mineral waters were popular in America as they were in Europe, though in this country all classes participated; the egalitarian vacation was an American invention*" (Miller, 1973, page 75).

The first law leading to the preservation of ownership of property by the U.S. started by the protection provided by a reservation. On April 20, 1832, Congress reserved the Hot Springs in Arkansas for future disposal (4 Stat., 505). But the reserve was not working:

"*About 1870 the government awoke to the realization that hundreds of people were squatting on the reservation in houses and hotels, plying the trades of a resort or tourist attraction. Properties in Hot Springs had been purchased or rented from three original owners, who had made pre-emption claims. The reservation act of 1832 conflicted with their claims*" (Miller, 1973, page 271).

In 1877 a commission was created to utilize the reservation at the Hot Springs and permit construction of the railroad utilizing a right-of-way (March 3, 1877, 19 Stat., 377). The following year the Secretary of the Interior was charged to lease the bath-houses to the owners for a specified term and tax (Act of June 20, 1878, Chapter 359, 20 Stat., 230). The Act of December 16, 1878 (20 Stat., 258), then converts the reservation to the Hot Springs National Park. This legislation includes the directive to provide baths to the indigent.

This is a synopsis of the gradual change in policy that has been discussed previously. The original reservation did not keep the property in U.S. ownership. The following legislation forced the occupants to accept a lease for their improvements and kept the property in U.S. ownership. It was the beginning of successful legislative actions where Congress was bowing to public pressure for the retention of property for the corporate people. The legislation contained directives for a commission that provided accountability, which was missing previously.

National Parks. The geologic explorations found unique geologic settings. The unique Yellowstone National Park renewed the debate over who would profit from natural resources. Congress reacted by reserving the land as a public park on March 3, 1872. This legislation broke the pattern of transferring all public lands to private control. "*It introduced the novel idea of a park for a whole nation's people*" (Miller, 1973, page 250). Senator Samuel Pomeroy of Kansas stated:

"*The only object of the bill is to take early possession of it by the United States and set it apart, so that it cannot be included in any claim or occupied by any settlers*" (Miller, 1973, page 251).

Immediately, the passage of this unique legislation retaining ownership caused Congress to wrestle with the new responsibility. Retaining ownership for the public rather than for a specific agency's need raised the issues of property protection and management. They had bad

experiences with the Hot Springs in Arkansas and did not want a repeat. Yellowstone Park was originally administered by the U.S. Army to prohibit trespassing.

Precedent was also set when the U.S. Military Reservation on Mackinac Island was converted to a National Park (March 3, 1875, 18 Stat., 517). The traveling public was becoming conscious of resources, including natural parks, and Congress was responding.

To finish the example of the Hot Springs in Arkansas, note that in the development of park policy Congress incorporated that unique geologic setting. On December 16, 1878, Congress passed legislation making the Hot Springs a National Park.

However, the Park system was not popular with speculators and homesteaders. All reservations seemed to block the progress of settlers and settlement. This was the larger of the public opinion pressures. To the politicians the preservation of title to the U.S. seemed to need a social good attached. Preservation of the National Forests became acceptable when they were associated with the protection of the water supplies. Experience had shown that clear-cutting of timber on steep slopes caused erosion and siltation. It was suspected that the loss of timber caused flooding. The solution was to protect the forests to maintain adequate watersheds that in fact acted like reservoirs.

Whether the circumstances of the drought years of 1886-1888 had any influence is uncertain, but by 1891 the President had the authority to establish forest reserves on public land. On March 30, 1891, a proclamation issued by President Benjamin Harrison established the first forest reserve adjacent to Yellowstone Park.

By the time the Appropriations Act of 1888 had passed, the policy of national ownership of necessary resources was developing. Therefore, the statement in the Act of October 2, 1888, that reservoirs are "*hereby reserved from sale as the property of the United States, and shall not be subject after the passage of this act, to entry, settlement, or occupation until further provided by law*," was not a precedent-setting action.

For this discussion it is considered part of the continuing experiments to find workable policy. The debate on how to preserve resources and Federal ownership was to continue. However this Act introduces a new reservation that was to be established on the findings of scientific investigations accomplished in the future. It was interpreted that the wording closed all of the public lands in the West and it was later repealed.

**Reservoir Sites.**

The idea of retaining resources was not new, but the concept was certainly novel that "*the lands which may hereafter be designated or selected by such United States surveys for sites for reservoirs, ditches or canals for irrigation purposes and all the lands made susceptible of*

*irrigation by such reservoirs, ditches or canals are from this time henceforth hereby reserved from sale as the property of the United States."* This section discusses the necessity of retaining reservoirs in Federal ownership.

It is difficult to separate history into topics, when events occur simultaneously. As the debate over legislation to study the practicability of constructing reservoirs occurred, at the same time as the debate was occurring over the ownership of reservoirs. Between the time of the passage of the Joint Resolution on March 20, 1888, and the Appropriations Act of October 2, 1888, the support was obtained that the reservoirs would be the property of the U.S., at least initially.

Past experiences had already demonstrated a tendency of the American people to seek forgiveness, rather than permission.
The past history of the government, in response to perceived public opinion, was to reward this attitude with legislation making the trespass and exploitation legal after the fact. Examples already stated include the Timber, Lead Mines, and Mining Camp experiences. Another experience of this attitude was trespass for homesteading, which began in colonial days. Earlier, the topic of land speculation and homesteading moving into unoffered areas was introduced. That topic is directly related to national ownership of reservoir sites.

Reservoirs. The mining companies with investment capital were constructing reservoirs and canals in support of their industry. Attempts were made to encourage the construction of reservoirs in support of the agriculture industry. However, in the agriculture industry the profit motive and the organization structure was not available. Agriculture was being produced in the prime locations. Irrigation systems had been developed where low cost opportunities were available. The land remaining was land that had to receive irrigation water to produce cash crops. The land was along benches where the rivers had cut deep channels, and the irrigation systems had to be constructed many miles upstream. Pumping was not an economic alternative. Other lands were desert lands located away from river locations.

Alternatives to irrigation had been developed when the Agriculture Department introduced new farming practices for areas of less rainfall. This introduced the concept of "dry-land" farming. Any further agricultural expansion had to depend on the construction of reservoirs and canals.

There are examples of successful irrigation systems developed by private enterprise. The southwest Indians and the Spanish Missions were both established on successful irrigation systems. The Mormon settlement in Utah established thousands of acres in successful irrigation systems in a matter of three years. In California and Nevada, mining stabilized and agriculture had become more important. *"In 1873, Congress had appointed a commission to investigate the possibilities of irrigation in the San Joaquin, Tulare, and Sacramento Valleys in California. The commissioners concluded that extensive systems of irrigation could be built only by the State or by private capital and could be built only after a complete instrumental survey had been made to determine the location of dams, canals, and ditches and to divide the country into different irrigation districts."* (Rabbitt, 1980, page 4).

Major John Wesley Powell. Another individual needs to be introduced at this time: Major John Wesley Powell. Powell was appointed professor of geology and natural history in the State Normal University of Illinois in 1867. He began making field trips to Colorado with volunteer assistants searching for geological and zoological collections. By 1868 Congress authorized the Secretary of War to issue rations for 25 men to explore the Colorado River under the direction of Professor Powell. The Colorado explorations occurred in 1869-1871. By 1871, Powell's explorations had been placed under the oversight of the Smithsonian Institution.

In 1874 Powell suggested that his survey be extended to connect with the other geological surveys to the north and west. This was approved and Powell's survey was called the "Geographical and Geological Survey of the Rocky Mountain Region." The explorations had became one of the scientific geological surveys of the west, focusing on the lands adjacent to the Green and Colorado rivers. Between 1874 and 1878 about 10,000 square miles were surveyed each year within the Colorado River basin (Follansbee, 1938, page 14). Powell's interest in Indians and the Mormon community gave him a "vision" for reclaiming the "Great American Desert." His surveys included a classification of the public lands for determining the extent and location of the irrigable, timber, mineral, and waste lands.

In 1878, Powell submitted a "*Report on the Lands of the Arid Region.*" The report pointed out "*that droughts would be frequent in the western part the "Subhumid" Region and that irrigation would be undertaken at an early stage, whereas in the eastern part of the region, droughts would be less frequent and farming could be undertaken for long periods without irrigation*" (Rabbitt, 1980, pages 3-4). "*He included drafts of two bills for the organization of irrigation and pasturage districts by homestead settlements, following classification of the lands. Major Powell's proposal, like that of the commissioners in 1874, was essentially a political solution of the problem*" (Rabbitt, 1980, page 4).

Powell was friends with the members of the National Academy of Sciences, and was allowed to review the preliminary policy recommendations on the reorganization of the surveys. Powell drafted legislation based on the Academy's recommendations and his own report of 1878. "*Powell had won his major objective in bringing together in Interior the topographical and geological surveying work of the government and he had contributed to the adoption on March 3, 1879, of a second measure authorizing the creation of a public land commission*" (Gates, 1970, page viii). Powell was appointed by the President as a civilian to served on the Public Land Commission.

After the establishment of the USGS, Powell became the second Director in 1881. Powell pushed for the Joint Resolution legislation, and was responsible for responding to the Senate Resolution. During the summer of 1888 he testified before the House and Senate appropriations committees. The records show that he stated that an irrigation survey was already present in the USGS's topographical mapping activities. Powell had always had an avid interest in the irrigation topic, and as the USGS mapped and classified land, it would be natural that they also noted arable land. He suggested that the government should not build the reservoirs, but, "*After*

*the survey had identified the sites and irrigable lands, cooperative organizations of homestead settlers could unite to build the reservoirs*" (Miller, 1973, page 423).

Anti-monopoly. The reservation of the reservoirs was an anti-monopoly measure, an action for the common good and the welfare of settlers (Miller, 1973, page 425). The anti-monopoly sentiment should not be difficult to understand. One extreme of capitalistic philosophy is that it is susceptible to being manipulated into monopolies. The U.S. has promoted capitalism since the founding. The original States chose to acquire land to be resold for revenue. Large holdings of land were sold to speculators and developers to be resold for profit. As new States were admitted to the Union, they were granted land to ensure their economic welfare. Further grants were issued to promote development. Grants were issued to corporations, including land for resale for revenue for the projects. Add to the mixture the "seek forgiveness, rather than permission"
attitude and monopolies were abusing the government's intentions. The abuse was aided by the vast land domain and a hands-off attitude by Congress. Part of the change in public opinion and Federal policy concerning the protection of resources was a reaction to monopolies.

The anti-monopoly sentiment was growing. In President Cleveland's annual message to Congress in December 1888, he made the following statement concerning the new irrigation legislation:

> "*The arid lands*, he said, *should not 'be yielded up to the monopoly of corporations or grasping individuals. *** Already steps have been taken to secure accurate and scientific information of the conditions, which is the prime basis of intelligent action. Until this shall be gained, the course of wisdom appears clearly to lie in the suspension of further disposal. ... No harm can follow this cautionary conduct. The land will remain, and the public good presents no demand for hasty dispossession of national ownership and control*'" (Rabbitt, 1980, pages 157-158).

The anti-monopoly sentiment was to flourish in government policy during Theodore Roosevelt's administration in the twentieth century. Obviously it was a concern at the time that the Appropriations Act of October 2, 1888. The declaration that reservoirs are property of the U.S. will be considered as an experiment in finding a solution to national ownership.

Another unique connection in this legislation is the statement that "*hereby reserved from sale as the property of the United States.*" It may have been the first time Congress stated the obvious; that reservations were directly related to the intention of National Ownership. It was a statement that Congress intended to not let all of the public lands pass to States or individuals. It was a statement that certain resources had higher values to the corporate and would be owned by the Federal government. The establishment of a reservation for the reservoir resource was significant as it set the precedent for 21 subsequent legislative actions preserving dams and reservoirs as property of the U.S. The legislation established the Director of the USGS as the first official other than the President the authority to withdraw lands.

**Practical Resolution.**

The tendency is to state that the Joint Resolution and the following Appropriations Act started a struggle. It ended the "hands-off" attitude of government with a dramatically incorrect phrase, and the opponents set about to take advantage of the mistake. Control was the prize for the winners. The initial battle was won by the "laissez faire" contingent. Within three years, the Irrigation Survey was dissolved, the Appropriations Act was repealed, and policy amended, explained below. However, the reservoir site remained reserved and in national ownership. The events of the battle explain initial operation of the policy. Much happened and history will again be used to explain the circumstances, Congressional actions, and subsequent policy.

On April 6, 1889, Powell designated the first reservoir site to be reserved. It was the Bear Lake site in southern Idaho. Later that summer the Idaho Constitutional Convention complained that "*... speculators had followed the Survey crews and staked out claims within the supposedly reserved reservoir site of Bear Lake, ....*" On August 2, 1889 the Convention asked the DOI to retain Bear lake as a public reservoir. Secretary of the Interior, John W. Noble dutifully responded to the Governor of Idaho:

> "*It follows necessarily that the speculators, corporations, or other persons referred to in the resolution, are under the effect of this law and unable to obtain the advantages that you say they are seeking. Unless the law is repealed or the President opens the lands to settlement under the homestead laws, the Government must have and will take eventually absolute control of every acre of arid land that may be redeemed by the system of reservoirs, canals, and ditches, as provided in the appropriations act mentioned.*" ...

Secretary Noble "*... then directed the Commissioner of the General Land Office to notify local-land offices to cancel all claims filed after October 2, 1888, on reservoir, ditch, or canal sites. On August 5, this was done and, in effect, all land offices in the arid region were closed, for no one knew where the reservoir, ditch, or canal sites were*" (Rabbitt, 1980, page 166).

Secretary Nobles action revealed the mistake in the language of the Appropriations Act, and the speculators and claimants started an uproar. A new order was issued providing that new patents could be issued but maintained a contingency that they may be found invalid. The battle was underway. Would the reservation of reservoirs be upheld as was the intent of Congress? Or would the trespasser again be forgiven and made whole? The second order was just the beginning!

From November 1889 to August 1890, Congress debated the irrigation issue most strenuously. The spring of 1890 was pivotal for the Irrigation Survey. Past debates were continued, and Major Powell was the focal point. He was smart, but opinionated, and caught in political maneuvering. But he was under attack by his political foes. One of the questions concerned the exact meaning of the reservation clause. One of the debates centered on whether the irrigation

companies could build the sites, or if the government should issue charters for their construction, or if the government should build the sites. An argument for government ownership was advanced that: In areas of irrigation the streams run through different states and territories, and unless control is maintained by the National Government, upstream users will take all the water.

The harsh attack was won by the conglomerate foes of the Irrigation Survey. It was a new concept, many Congressmen admitted lack of knowledge on the topic, and it was a new agency struggling with its own organization. Major Powell was its strongest advocate, but he had made enemies. The Appropriation Act for 1891, dated August 30, 1890 (Chapter 837, 26 Stat., 391; 43 U.S.C. 662), amended the Appropriation Act of October 2, 1888, and removed the funding for the Irrigation Survey. However, the ten-month debate concluded that the dams and reservoirs needed a higher protection than the ditches and canals which were protected by a reserved right-of-way in all patents. The Federal ownership of reservoirs was maintained; the sites remained protected although the irrigable and canal locations were restored to homesteading. The act states:

> *"...: and so much of the act of October second, eighteen hundred and eighty-eight, entitled "An act making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine, and for other purposes," as provides for the Reservation of arid withdrawal of the public lands from entry, occupation and settlement, is hereby repealed and all entries made or claims initiated in good faith and valid but for said act, shall be recognized and may be perfected in the same manner as if said law had not been enacted, except that reservoir sites heretofore located or selected shall remain segregated and reserved from entry or settlement as provided by said act, until otherwise provided by law, and reservoir sites hereafter located or selected on public lands shall in like manner be reserved from the date of the location or selection thereof.*
>
> *"No person who shall after the passage of this act, enter upon any of the public lands with a view to occupation, entry or settlement under any of the land laws shall be permitted to acquire title to more than three hundred and twenty acres in the aggregate, under all of said laws, but this limitation shall not operate to curtail the right of any person who has heretofore made entry or settlement on the public lands, or whose occupation, entry or settlement, is validated by this act: Provided, That in all patents for lands hereafter taken up under any of the land laws of the United States or on entries or claims validated by this act west of the one hundredth meridian, it shall be expressed that there is reserved from the lands in said patent described, a right of way thereon for ditches or canals constructed by the authority of the United States."*

Note that the trespassers on the irrigable land had also been upheld. Their claims were honored. But the claimants on the reservoir sites lost. Future sites on public land could still be reserved, and would become the property of the U.S.

Another adjustment was made before the battle was completed. The amendment left the reservoir sites reserved, but the withdrawal was delineated similar to the salt springs containing whole sections containing the reservoir. By the Act of March 3, 1891 (Chapter 561, 26 Stat., 1101; 43 U.S.C. 663), the withdrawal was reduced to the actual lands needed:

> *"SEC. 17. That reservoir sites located or selected and to be located and selected under the provisions of 'An act making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine, and for other purposes,' and amendments thereto, shall be restricted to and shall contain only so much land as is actually necessary for the construction and maintenance of reservoirs; excluding so far as practicable lands occupied by actual settlers at the date of the location of said reservoirs ..."*

In summary, the Congress kept the reservoir sites as property of the U.S., fully withdrawn, but reduced the acreage needed for withdrawal to that actually needed. The administrative policy that only the reservoir and only the actual lands needed established in 1890-1891 has been followed to the present. The precedent has been extended to waterpower and multi-purposed sites as well.

**Administration and Waterpower Sites.**

The battle over Federal retention of reservoir sites was intense but finished. Congress had passed legislation to that effect and over the next three years passed two subsequent acts confirming that the sites were to remain in Federal ownership. The next challenge was to work out the operational administration of the policy.

Historical Events. The administrative challenges were a struggle of their own. Some Congressmen had full intentions to move the function to the Department of Agriculture. When that failed they were content to leave the Irrigation Survey unfunded. It was the Irrigation Congresses, further policy legislation and economic circumstances that caused the funding to be resumed.

Governor Thomas of Utah called for an Irrigation Congress,

> *"for the purpose of hastening the reclamation of the arable land, so far as possible, and for the purpose of petitioning Congress to cede to the States and Territories the arid lands within their borders, for the purpose, first, of reclaiming the same; second, in aid of public schools; and third, for such other public purposes as the Legislative Assemblies of the States and Territories may respectively determine"* (Rabbitt, 1980, page 202-203).

The first State-Federal Irrigation Congress was held in Salt Lake City in September 1891, and Nevada Senator William M. Stewart presided over most of the sessions. The keynote speaker was Francis Newlands who was destined to become Congressman, Senator, and author of the Reclamation Act of 1902. In the keynote speech, Newlands commended Senator Stewart for challenging Major Powell, for denying appropriations to the Irrigation Survey, and for securing appropriations for the Department of Agriculture. The Irrigation Congress further endorsed the Agriculture Department and recommended appropriations from Congress for its work. Congress did not follow these recommendations and ended the Agriculture's irrigation investigations. Therefore it remained the responsibility of the USGS for any administration of the legislation concerning reservoir sites.

During the hearings of 1888 and 1890, Major Powell had told Congress that the topographic mapping and stream gaging activities of the USGS were the basis for location of the reservoirs. The USGS's normal duties were essentially locating the sites. The stripping of funding for the Irrigation Survey made the USGS cautious about their testimonies to Congress. However, as early as 1892, the appropriations debates still concerned the "*unmentionable purpose of locating and developing water resources.*" "*A letter from Major Powell was read which said, 'The people are petitioning and urging in every way possible for such a survey of the region as will exhibit the possibility of its redemption by irrigation, and it seems to me that it would be wise and just to grant their cries*'" (Rabbitt, 1980, page 204). The public was putting pressure on Congress for irrigation systems and Congress was struggling to find a workable policy. In the meantime the USGS quietly continued its investigations.

Mr. Frederick Hayes Newell was the official representative of the Department of the Interior at the Second Irrigation Congress, held in Los Angeles, in October 1893. Several policy foundations came out of this Congress including:

- The Congress wrestled with questions on the extent of arable land available for irrigation and the sufficiency of waters available for irrigation. Newell told the Irrigation Congress that any great increase in the area irrigated had to come by development of all sources of waters and capturing the waste flows of flood water. This later developed into the search for sources of irrigation water supplies, and eventually to studies of all applications of water resources. In fact Newell started a compilation of data on water supplies that he presented at the next Irrigation Congress.

- The Second Irrigation Congress demanded rigid national and State supervision of dams and other works in order to protect life and property. Note there had been some failures of the dams built by the mining companies, causing massive destruction. The ground work for national supervision of construction practices was established. This was incorporated into the Federal Water Power Act of 1920 (Chapter 285, 41 Stat., 1063).

- The Second Irrigation Congress recommended that "*the government devote part of the money received from the sale of lands in the semiarid region to the practical investigation of means for their reclamation*" (Rabbitt, 1980, pages 234-236). This recommendation was adopted when the Irrigation Service was established in 1902 (Chapter 1093, 32 Stat., 388) for the construction of irrigation reservoirs.

Another legislative development creating a workload and further developing the DOI's experience was the Act of August 18, 1894 (Chapter 301, 28 Stat., 372-422) was known as the Carey Act. It authorized the Secretary of the Interior to assist in the irrigation development of desert lands. The legislation contains provision for land grants to the States, and approval authority to the Secretary of the Interior, but the initiative was the responsibility of the State governments. Some projects were developed and successful, but leaving irrigation development to the States had too many deficiencies to succeed.

The Third Irrigation Congress was held in Denver, Colorado the week of September 3, 1893. Newell presented a paper on the water supply of the public lands as a result of his investigations since the last Congress. This Irrigation Congress asked "*that sufficient appropriation be secured from the General Government for carrying out the work of discovering waters, applicable to the reclamation of the arid lands, and for the prosecution of surveys necessary to determine the location of lands susceptible of irrigation, and the selection and segregation of reservoir sites*" (Rabbitt, 1980, page 246-247). This Irrigation Congress voted to "*let Congress, in its wisdom, decide*" which agency should do the work.

The Irrigation Congresses were proving to be influential. The USGS was responding to their need for scientific information in a satisfactory manner. The Congress was shifting their position from the 1891 recommendation that the Irrigation Survey be accomplished by the Department of Agriculture. Further, Congress itself was responding to the recommendations: The Appropriations Act of August 18, 1894, provided authorization for "'*gauging the streams and determining the water supply of the United States, including the investigation of underground currents and artesian wells in arid and semiarid section*' as a function of the Geological Survey" (Rabbitt, 1980, pages 245-246).

The next step fixed the waterpower and reservoir functions in the USGS. "*The Fourth Irrigation Congress, which met at Albuquerque in September 1895, did a complete turnabout from the first Congress and resolved 'That (the U.S.) Congress, at its next session, be most earnestly requested to approximate $250,000 for the continuation of the Irrigation Survey as heretofore carried on under the direction of the Department of the Interior*'" (Rabbitt, 1980, page 257).

The function was established in the DOI. However, in 1895, the scope of the irrigation Survey was enlarged. The administrative charge to the hydrographic section (the organizational unit in charge of the operational responsibilities) under Newell was a general reconnaissance for obtaining information as to the methods of utilizing water for power, irrigation, and domestic purposes. (Follansbee, 1938, page 76).

The administration of the reservations for reservoirs was well established in the USGS. The Irrigation Congresses and their recommendations to Congress reversed and turned to support of the USGS. Congress in their attempts to foster homesteading by investigating large irrigation projects became dependent on the USGS and gave them the Reclamation Service. Several members of the USGS, including F. H. Newell, guided the USGS through this transition time with the vision and integrity that paid off.

Executive Discretion. Major Powell established the USGS and remained faithful to its mission. Even when attacked in the hearings of 1890 his integrity was found intact. He resigned on May 4, 1884, after recommending that the Bureau of the Geological Survey be transferred to the Department of Agriculture. The recommendation, although it pointed out the advantages, alienated the Secretary of the Interior, Hoke Smith. Smith asked for "*a reduction of $1,000 in the salary of the Director, a device used by the administration to embarrass officials and force their resignation*" (Rabbitt, 1980, page 238).

The administration of the USGS remained stable while there were some significant changes in the Presidency and the Secretary of the Interior's Office. The biggest change in the Presidency was the assassination of President McKinley on September 6, 1901, and the subsequent introduction of President Theodore Roosevelt on September 14. President Roosevelt ushered in a revolution called the "Conservation Movement."

Two young career employees called on President Roosevelt before he even moved into the White House. They were F. H. Newell and Gifford Pinchot, Chief Forester of the Forest Service. They had dealt with him before when he was the Governor of New York. They asked him to mention the Reclamation Service, and promote forestry in his first address to Congress. President Roosevelt asked them to prepare a draft for what he should say on the subjects. The message departed from the normal Republican position and the President asked for permission to transfer the protection, mapping and description of the forest reserves from the General Land Office and the USGS to the Bureau of Forestry, Department of Agriculture. He also endorsed the Federal construction of reservoirs for irrigation.

President Roosevelt had little confidence in legislative action and his most significant accomplishments came through his skill in administration. In 1903 he settled a controversy over Yosemite Park by administrative procedures which were beyond the reach of public controversy. He used Executive Proclamations and forest reserves to bring the area around the park under Federal jurisdiction. By 1906 the residents of the State of California recognized the expense of the Park and it became a National Park.

He understood the importance of having competent assistants, including Newell and Pinchot. In cases he appointed former opposition to positions and converted them to allies. One example was William A. Richards of the Republican Party in Wyoming. The controversy was over grazing and the President asked him to take the office of Commissioner of Public Lands.

Roosevelt appointed a Public Land Commission to survey the effects of present laws and to recommend changes to Congress. "*Privately, they intended to use the information to enlarge the scope of administration by their own Bureaus*" (Richardson, 1962, page 21). The Public Land Commission was formed by Richards, Pinchot and Newell.

After President Roosevelt's election in 1904, he started reorganizing the Department of the Interior and the Bureau of Forestry. In the Interior, it was becoming clear that the Secretary, Ethan A. Hitchcock was not a team player. It became intolerable when one of his investigations of fencing on public land eventually drew up indictments against several influential Republicans in Congress. When Richards was mentioned in further indictments, Roosevelt decided it was Hitchcock who was dispensable. The successor to Hitchcock, as Secretary of the Interior, was James R. Garfield, already a member of the inner circle. He had developed an agility in dealing with administrative politics that earned him the admiration of President Roosevelt.

The impacts of this philosophy were felt directly on the USGS. Two examples of the work accomplished as administrative solutions include:

- The Hydrographic Section also undertook the first of a series of special investigations for the Secretary of the Interior. The first was an investigation of irrigation for the Gila River Indian Reservation. The investigation resulted in the recommendation that a dam be constructed. The Fifth Irrigation Congress favored government construction of the dams that the survey had recommended.

- "*The Division of Hydrography, in addition to gaging streams, surveyed several reservoir sites, and prepared estimates of their capacity and cost, examined canal lines conducting the water from these reservoirs to the irrigable lands, and ascertained the cost of construction chiefly in connection with the Indian reservations but also in California*" (Rabbitt, 1980, page 295). Other surveys beside the Gila River investigation include the Uinta Indian Reservation in northeastern Utah, the Riverside Reservoir site in Arizona, the Mancos Canyon in southeastern Colorado, and the Hetch Hetchy, near the headwaters of the Tuolumne River in California.

The administration was gaining in power and the philosophy for conservation of the resources was becoming more popular.

Conservation Movement. Within five days of Secretary Garfield's appointment, the Reclamation Service, and Newell were moved out of the USGS. The priorities of the new Secretary may be indicated by the fact that the appointment of USGS Director Smith did not occur until one month later. Newell had control of waterpower and the Reclamation Service in the USGS until July 1, 1906, when he resigned the waterpower portion. Yet he was brought the addition of waterpower to Reclamation projects.

President Roosevelt's hand-picked team was in place for only two years. They held an unprecedented popularity for the Conservation Movement and the team was in place to reverse the "hands-off" policies of the past and empower the government to initiate land and resource policies which include "wise use" for "multi-purposes" and "sustained-yield." The resources of the nation were no longer to be exploited, but managed for the future.

In the annual address to Congress in 1907, Roosevelt emphasized the need for a comprehensive program for the "*conservation of our natural resources and their proper use.*" He called it "the fundamental problem which underlies almost every other problem of our national life." The recommendation for the development of rivers has already been mentioned, as well as the support for irrigation and forest reserves. Other recommendations included that the Government should part with its title only to the actual homemaker, not the profitmaker. He stressed that natural resources must not be wasted:

> "*We are prone to speak of the resources of this country as inexhaustible; this is not so. The mineral wealth of the country, the coal, iron, oil, gas, and the like, does not reproduce itself, and therefore is certain to be exhausted ultimately; and wastefulness in dealing with it today means that our descendants will feel the exhaustion a generation or two before they otherwise would*" (Rabbitt, 1986, page 70).

He introduced the concept that the right to develop resources (at the time, coal mines) could be separated from the title to the soil. It was a recommendation to separate the development of resources from the necessity of owning land. Title to the resources and title to the land could be separated.

The previously mentioned Inland Waterways Commission of May 1908 submitted their report which stated an obvious economical solution would be that the construction of dams should be for multi-purposes. They also stated:

> "*While the rights of the people to these and similar uses of water must be respected, the time has come for merging local projects and uses of the inland waters in a comprehensive plan designed for the benefit of the entire country*" (Rabbitt, 1986, page 69).

It is unfortunate that there has never been an accepted comprehensive plan. It remains a goal for the Executive in the administration of public policy.

The government employees, particularly those of the Secretary of the Interior, including USGS personnel were also being utilized by the administration because they held the scientific opinions that supported conservation:

> "*In 1907, Secretary of the Interior Garfield, fresh from his crusading days as Commissioner of Corporations, charged that if the waters of the great mountain ranges*

*of the West were acquired by private interests, 'generations to come will pay tribute for use of water which should be preserved as a public utility, not a private privilege'"* (Rabbitt, 1986, page 71).

Joseph A. Holmes, USGS, took his stand on the prevention of waste:

"*The world he said, recognized Americans as the most wasteful of all people in the utilization of their resources. Water, 'in some respects the most valuable of all our mineral resources,' was being wasted, by excessive use in many places, by not being used as a source of power in others*" (Rabbitt, 1986, page 70). (Note that water was established as a mineral resource. In the Senate debate which began on May 10, 1908, it was established that water was a mineral, and that it was one of the most valuable, if not the most valuable of the country's mineral resources.)

The recommendations in the Inland Waterway Commission's report by M.O. Leighton, the Survey's Chief Hydrographer, included:

"*... that the logical way to control a river is to control the sources of its water supply, the logical way to prevent floods is to store and temporarily hold flood waters in reservoirs so they do not descend on the lower valleys in a large volume, and the proper way to maintain navigable depth of rivers at the low-water season is to provide for the intelligent use of stored water. In most places, levees and canalization were not the way to control the rivers. The first cost of his proposed system would be large but the ultimate cost would be nominal in comparison with the benefits, and, moreover, if a method could be devised by which the United States could realize a fair return on the additional water power created by the proposed storage system, the entire cost of the reservoirs would be returned to the Treasury*" (Rabbitt, 1986, page 71).

A central support mechanism the administration used was to appeal to the public's anger to the exploitation of monopolies. The report of the Inland Waterways Commission submitted in 1908 contains the following statement:

"*Whether water is now or will hereafter become the chief source of power, the monopolization of electricity from running streams involves monopoly of power for the transportation of freight and passengers, for manufacturing, and for supplying light, heat, and other domestic, agricultural, and municipal necessities to such extent that unless regulated it will entail monopolistic control of the daily life of our people in an unprecedented degree*" (Smith, 1913, page 41).

The rising recognition of waterpower is recognized in statements of President Theodore Roosevelt in messages to Congress during 1908 and 1909 where he called attention to the danger of an uncontrolled monopoly of waterpower development and to the desirability of preventing - power sites on the public domain from falling into the hands of speculators and monopolists.

The Right-Of-Way act of February 15, 1901, caused a flurry of applications with possible monopolies being formed. The interest and debate concerning public vs. private control of water power sources stimulated the Act of June 21, 1906 (Chapter 3508, 34 Stat., 386-387) authorizing the Corps of Engineers approval authority over dams on navigable streams. Previously, for more than a decade, building dams in navigable streams had required express authorization by Congress and approval by the Chief of Engineers and the Secretary of War. One requirement was that construction begin within one year and be completed within three years.

Another practice that had been acceptable was for speculators to gain permits or legislation to build dams and delay construction in case others might be willing to purchase the right at a higher price. In the custom of the administration, action to curb this practice was taken in the style of President Roosevelt: "*After the management of the forest reserves was transferred from the Department of the Interior to the Department of Agriculture in 1905, the Forest Service began to charge for such permits within the reserves and to limit the length of the permits*" (Rabbitt, 1986, page 71). In the provisions of the Federal Water Power Act of 1920, the investigative permits are limited to a time limit of three years.

The administration was not infallible and "*In the spring of 1908, the administration decided to take a stand on the issue when Congress passed a routine bill to extend the time for completion of water-power works on the Rainey River, a boundary stream between the State of Minnesota and the Dominion of Canada. Permission to build the dam had first been given in 1898 and at that time a limit of 3 years for completion had been set. The limit had been extended several times, and no difficulty was foreseen in obtaining another extension. On April 13, however, Roosevelt vetoed the bill with the conservationist manifesto that natural resources must not be granted and held in an undeveloped condition for speculative or other purposes*" (Rabbitt, 1986, page 72). They won the case but further staffing showed that the delay was legitimate, and the dam construction was extended.

President Roosevelt called a "Conference of Governors" to dramatize the need for natural-resources management. It met at the White House May 13-15, 1908, and was one of the most powerful conferences in modern history.

> "*The Conference adopted a 'declaration of views and recommendations' in which the Governors declared their 'firm conviction that this conservation of our natural resources is a subject of transcendent importance.'*" They agreed "'*in the wisdom of future conferences between the President, Members of Congress, and the Governors of States,' recommended the appointment by each State of a commission on the conservation of natural resources, and the enactment of laws looking to 'the conservation of water resources for irrigation, water supply, power, and navigation, to the end that navigable and source streams may be brought under complete control and fully utilized for every purpose*'" (Rabbitt, 1986, page 75).

The Inland Waterways Commission followed by the Conference of Governors gave Congress enough guidance to debate and legislate waterpower and reservoir policy for the next 12 years. The conservation movement as focused by these events still influences national policy.

National Conservation Commission. It should not be surprising that the Executive moved forward ahead of Conservation legislation. President Roosevelt established a National Conservation Commission with Gifford Pinchot as Chairman. "*The Commission was organized in four sections--water resources, forest resources, resources of the land, and mineral resources--and to each of these sections President Roosevelt appointed, as he had to the Inland Waterways Commission, both members of Congress and members of the profession. The Inland Waterways Commission was in fact reconstituted as the Section on Water Resources.*" On June 19, 1908, the Executive Committee met "*and outlined a plan for making an inventory of the natural resources of the United States so that work could begin on July 1 with the cooperation of the various Federal bureaus, State authorities, and national organizations. Several men from the Geologic, Water Resources, and Technologic Branches were asked to prepare reports in connection with this inventory...*" (Rabbitt, 1986, pages 77-78).

The Commission's report was comprehensive and stated the policy that was followed in the administration of the conservation movement. Members of the USGS prepared papers and the one on floods and waterpower development concluded that the increase in flood tendency was due by and large to the denudation of forest areas.

> "'*Storage of flood waters in reservoirs would alleviate the danger of floods and under proper management would increase water-power possibilities in some areas and provide water for reclamation of many millions of acres of land in the arid West.' A special census had shown that at the time 5,365,000 horsepower was developed in the United States, more than half of it in the North Atlantic region and the drainage basin of the St. Lawrence River. Leighton calculated that a total power installation of at least 200 million horsepower was possible. The greatest water-power possibilities were in the northern Pacific region, essentially the basins of the Columbia and Sacramento Rivers. F.H. Newell of the Reclamation Service, in the same Conservation Commission report, estimated that a total of between 40 and 50 million acres, including the area then under ditch, could be reclaimed. If all the runoff waters could be conserved and used in irrigation, the total area might be nearly 60 million acres, but large areas existed where there was no irrigable land on which the water could be brought at a reasonable cost*" (Rabbitt, 1986, pages 82-83).

The report had the following related statements that are included as policy that was endorsed by the Executive. (1) "*Water was classed as a naturally renewable resource; man may do nothing to increase it but may do much in the way of conservation and better utilization*" (Rabbitt, 1986, page 84. (2) *Water supply, the Commission emphasized, should be considered the paramount use of water, and next should come navigation in the humid regions and irrigation in the arid regions*" (Rabbitt, 1986, page 85). (3) *The development of power on navigable and source*

*streams should be coordinated with the primary and secondary uses of the waters but should be encouraged, other things being equal, because it would reduce the drain on other resources and because properly designed reservoirs and power plants would retard the runoff and so aid in the control of streams for navigation and other uses*" (Rabbitt, 1986, page 85). (4) "The Commission urged that broad plans be adopted to provide for a system of water improvement extending to all uses of the waters and benefits to be derived from their control, and that

> *To promote and perfect these plans, surveys and measurements should be continued and extended, especially the more accurate determination of rainfall and evaporation, the investigation and measurement of ground water, the gauging of streams and determination of sediment, the topographic surveys of catchment areas and sites available for control of the waters for navigation and related purposes*" (Rabbitt, 1986, page 85).

The Commission also stated "*Classification of all the public lands was necessary. The timber, minerals, and the surface of the public lands should be disposed of separately. Public lands more valuable for conserving water supply, timber, and natural beauties or wonders than for agriculture should be held for the enjoyment of all people except from mineral entry. Title to the surface of the remaining non-mineral public lands should be granted only to actual homemakers*" (Rabbitt, 1986, page 85).

The National Conservation Commission completed its report by December 1, 1908, and it was endorsed 10 days later by a joint conference of Governors, State conservation commissions, and delegates and representatives of State and national organizations dealing with natural resources. These policy statements by the Commission have found backing in executive discretion, and to some extent, in subsequent legislation.

Temporary Power Site Reserves. Secretary of the Interior Garfield reacted quickly and positively by making the withdrawal of 4 million acres for phosphate lands, and another withdrawal in Louisiana for natural gas. The philosophy behind these actions was explained to Congress:

> "*In the exercise of this power it is the duty of the Executive to take such action as will protect the interests of all the people of the United States in their property rights, and, if the occasion requires and the facts warrant, it is the duty of the Executive to prevent the acquisition of the public domain by private interests if such acquisition be detrimental to the public welfare.*
>
> *If there be no power to affirmatively provide for the ultimate use or disposition of the public domain in accordance with the needs of the public welfare, it is the duty of the Executive to temporarily prevent its acquisition until Congress may have an opportunity to consider the question and adopt appropriate legislation*" (U.S. Department of the Interior, 1908, page 12).

In November, William Howard Taft had been elected President and started selecting Cabinet members who were primarily lawyers. "*Garfield had expected to be retained, and Pinchot wanted him retained, but in mid-January, the President-elect had announced that Richard A. Ballinger, who had served briefly under Garfield as Commissioner of the General Land Office, would be his Secretary of the Interior*" (Rabbitt, 1986, pages 87). Congress may have begun to suspect that the new administration would not be a carbon copy of the Roosevelt administration and was not moving out on legislation.

The public policy of keeping waterpower and reservoir sites in Federal ownership was lacking legislation calling for their reservation. When the administration realized that there would be no legislation that year on waterpower and that a new Secretary was eminent, Pinchot, Newell, and Garfield made a decision to withdraw waterpower sites using the new administrative philosophy.

> "*With only days remaining before the change of administration, Newell selected and Garfield withdrew from all forms of entry some 3,928,780 acres along the courses of 16 rivers in 7 Western States. The last withdrawal was made on March 2, 1909*" (Rabbitt, 1986, page 88).

The ambition of F. H. Newell has to be recognized. His career with the USGS began with the initial investigation of reservoir sites. After weathering the loss of funding in 1890-1891 he influenced the Irrigation Congresses into supporting the USGS efforts in further investigations of reservoir sites. His acquaintance with private individuals started a contingency of part-time professional employees supporting the USGS. He started the investigations of water utilization, began investigations of waterpower, and a part-time professor started the river surveys. It appears that his interest was in the multi-purpose dam, an interest which was to be substantiated when he was Director of the Reclamation Service. As a team player with a personal interest in waterpower it was natural that he was involved in the withdrawal of waterpower sites.

The emphasis for keeping reservoir and waterpower ownership as Federal ownership had been established. The administration of that policy was being worked out. The Taft administration, with a Cabinet of lawyers had to make corrections. However, the subsequent legislation substantiated and formalized the policy that was presented beginning with the conservation movement.

**Waterpower and Reservoir Legislation.**

A new administration brought administrative change in 1909. President Taft, a hand-picked successor to President Roosevelt, selected his own Cabinet and the original proponents of the conservation movement were worried. Actually, the change in administration added strength to the overall concepts and ensured their longevity.

*"Congress has the power to dispose of land; not the executive. It is the business of the executive to protect the public lands within the limitation of his authority."*
--William Howard Taft

Richard Ballinger took over the duties of the Secretary of the Interior on the morning of March 6, 1908. He shared the President's determination to place the executive precedents of the conservation movement upon the sound basis of legislation. He questioned the legality of Secretary Garfield's last-minute withdrawals of waterpower sites. In many cases the withdrawals bordered on the holdings of private power and irrigation companies and blocked private development. (Another example of administrative maneuvering so common with the Roosevelt administration.) F. H. Newell, in recommending the withdrawals that blocked private development, could have been protecting the development interests of the Reclamation Service.

Note that Ballinger had served the Roosevelt administration one year as Land Commissioner, and reorganized that office. In private law practice, he had consulted with government agents and developed an interest in modifying certain regulations and strengthening others.

He wanted to add integrity to the withdrawal process and change the administrative withdrawals to withdrawals in response to legislation. His policy was "*I know of only one policy that pertains to an administrative officer and that is to administer the law as he finds it and enforce the highest efficiency on the part of his subordinates*" (Richardson, 1962, page 60).

With the agreement of the President, Ballinger revoked the administrative power sites withdrawals. On April 23, 1909, he directed the Geological Survey to make an investigation of waterpower sites and to recommend new withdrawals necessary to protect them pending enactment of legislation. Culminating on May 17, 1910, 146 new temporary power-site reserves were made. On July 2, 1910, the withdrawals of 1,454,500 acres were continued by Executive Orders under the provisions of the Act of June 25, 1910.

For the further discussion of the legislative actions preserving waterpower and reservoir title to the U.S., the legislative acts are grouped as protective, preventative, and operational legislation.

Protective Legislation. It has already been mentioned that administrative investigations had been carried out as requested by the Secretary. The Congress was becoming involved and passed legislation calling for further investigations before the change of administration. The pattern of legislation was being adjusted and established.

The Joint Resolution of March 20, 1888, and the Appropriations Act of October 2, 1888, were proactive to preserving reservoir sites. The first new action preserving title of reservoirs to the U.S. was another appropriation bill for the proactive investigation of sites in support of several Indian reservations on June 21, 1906. An investigation was authorized for the reclamation of part of the Red Lake Indian Reservation. The Secretary of the Interior withdrew lands utilizing this authority which was titled an "Indian Reservoir Site Reserve."

Later, another appropriation bill called for the investigation of power and reservoir sites, the construction of irrigation systems, and the authorization of reserves on March 3, 1909.

> Section 22: *The Secretary of the Interior is authorized to reserve from location, entry, sale, or other appropriation all lands within said Flathead Indian Reservation chiefly valuable of power sites or reservoir sites, and he shall report to Congress such reservations* (35 Stat., 796).

The withdrawal made utilizing this authority is titled an "Indian Lands Power Site Reserve."

The Acts of 1906 and 1909 were seeking irrigation systems for the Indians, but a larger concern was gaining momentum. The president in establishing the Conservation Movement, and then through executive discretion was protecting resources. The new administration felt uncomfortable and sought legislation to confirm that the previous administration was conducting business according to the desires of Congress.

In December 1909, Secretary Ballinger's annual report asked that specific legislative authority be given the Department to classify and segregate public lands into well-defined divisions according to their greatest apparent use. Interestingly, he stated that the Survey had undertaken such classification through the general authority given in its Organic Act, but that full legal effect should be given to such classification so as to prevent the entry of lands belonging to one class under laws applicable to another class. He further asked for a measure to authorize classification of all lands capable of being used for waterpower development and disposal of such lands under conditions reserving title to the Federal Government:

> "*The disposition of the public lands that had prevailed until the administrations of Secretaries Hitchcock and Garfield, Ballinger said, had 'naturally provoked the feeling that the public domain was legitimate prey for the unscrupulous and that it was no crime to violate or circumvent the land laws. It is to be regretted that we, as a nation, were so tardy to realize the importance of preventing so large a measure of our natural resources passing into the hands of land pirates and speculators, with no view to development looking to the national welfare.' In conclusion, he asked that Congress give specific authority to make temporary withdrawals of public lands because 'the legal authority of the Secretary of the Interior to make even temporary withdrawals of public lands for the purpose of submitting to Congress what may appear to the Secretary as an exigency requiring new legislation applicable to their proper use and disposition has been questioned.*'" (Rabbitt, 1986, pages 102-103).

Two pieces of legislation were passed on June 25, 1910. They authorized proactive withdrawals by the President and the Secretary of the Interior on public land and Indian reservations respectively. These acts were the authority that the Roosevelt administration was seeking, and was Congress' approval of the trend started administratively with the previous investigations.

A report of the Senate Committee on Public Lands, states that the Act was conformation of existing powers:

> "*The power conferred upon the President by the proposed substitute is a power that he has possessed and exercised almost from the inception of our public-land system and is a power that he still possesses and exercises. The power of the President to reserve public lands from sale and entry rests upon various statutes, upon numerous decisions of the courts, and upon long-established and long-recognized usage. *** It is only lately that this power has been doubted and questioned, and the object of the proposed substitute is to make it definite and clear beyond all dispute that the President possesses this power of withdrawal*" (Smith, 1913, pages 43-44).

The Act was titled "*An Act To authorize the President of the United States to make withdrawals of public lands in certain cases*" (June 25, 1910, Chapter 421, 36 Stat. 847; 16 U.S.C. 471, 43 U.S.C. 141). The familiar title is the "Pickett Act." The President may withdraw and reserve such lands for waterpower sites, irrigation, classification, or other public purposes. Withdrawals made utilizing this authority were titled Power Site Reserves and Reservoir Site Reserves. The Act states:

> "*... the President may, at any time in his discretion, temporarily withdraw from settlement, location, sale, or entry any of the public lands of the United States, and the District of Alaska, and reserve the same for water-power sites, irrigation, classification of lands, or other public purposes to be specified in the orders of withdrawals, and such withdrawals or reservations shall remain in force until revoked by him or by act of Congress.*"

The other Act of this date was "An Act To provide for determining the heirs of deceased Indians, for the disposition and sale of allotments of deceased Indians, for leasing of allotments, and for other purposes." (June 25, 1910, Chapter 431, 36 Stat., 858; 43 U.S.C. 148) The Secretary of the Interior was authorized to reserve land within any Indian Reservation valuable for power or reservoir sites. Withdrawals made utilizing this authority were titled Indian Power Site Reserves.

The following year's appropriation acts included "*An Act Making appropriations for the current and contingent expenses of the Bureau of Indian Affairs, for fulfilling treaty stipulations with various Indian tribes, and for other purposes, for the fiscal year ending June thirtieth, nineteen hundred and twelve*" (March 3, 1911, Chapter 210, 36 Stat. 1075). Expenditures from this appropriation could be used for investigations and surveys for power and reservoir sites on Indian Reservations. The Secretary of the Interior is authorized in his discretion to reserve from sale or other disposition any part of the old Fort Spokane Military Reservation chiefly valuable for power sites and reservoir sites. The withdrawal made utilizing this authority was titled Power Site Reserve.

These acts have been grouped together because they are proactive and authorize the investigation and reservation of title of waterpower and reservoir resources.

Preventative Legislation. Concurrently, Congress was legislating the investigation and reservation of titles of waterpower and reservoir site purposes for other reasons. The Acts were preventative and reactionary and addressed lands that were being given to Arizona and New Mexico as well as others that were being opened to homesteading. Prior to opening the land the Secretary was to screen the offered land for possible site, usually within a short time, and reserve title for waterpower and reservoirs. These Acts are listed:

- "*An Act To authorize the sale of certain lands belonging to the Indians on the Siletz Indian Reservation, in the State of Oregon*" (May 13, 1910, Chapter 233, 36 Stat. 367-368). Provided for Secretary of the Interior to reserve any waterpower sites that may be located on the lands offered for sale. The withdrawal made utilizing this authority was titled an "Indian Lands Power Site Reserve."

- "*An Act To authorize the survey and allotment of lands embraced within the limits of the Fort Berthold Indian Reservation, in the State of North Dakota, and the sale and disposition of a certain portion of the surplus lands after allotment, and making appropriation and provision to carry the same into effect*" (June 1, 1910, Chapter 264, 36 Stat. 456). The Secretary of the Interior is hereby authorized to set aside and reserve from location, entry, sale, allotment, or other appropriation such tracts as are found to be chiefly valuable for power sites or reservoir sites. The withdrawal made utilizing this authority was titled Reservoir Site Reserve.

- "*An Act To enable the people of New Mexico to form a constitution and state government and be admitted into the Union on an equal footing with the original States; and to enable the people of Arizona to form a constitution and state government and be admitted into the Union on an equal footing with the original States*" (June 20, 1910, Chapter 310, 36 Stat. 564). Reserved to the U.S. all land actually or prospectively valuable for the development of water powers and which shall be ascertained and designated by the Secretary of the Interior within 5 years. Withdrawals made utilizing this authority were titled Waterpower Designations.

- "*An Act To subject lands of former Fort Niobrara Military Reservation and other lands to homestead entry*" (January 27, 1913, Chapter 14; 37 Stat. 651) Provided that the Secretary of the Interior is authorized, in his discretion, to reserve from sale or disposition any lands of former Fort Niobrara Military Reservation and other lands, in the State of Nebraska, chiefly valuable for power purposes. The withdrawal made utilizing this authority was titled Power Site Reserves.

- "*An Act To alter and amend an Act entitled 'An Act granting lands to aid in the construction of a railroad and telegraph line from the Central Pacific Railroad, in California, to Portland, in Oregon,' approved July twenty-fifth, eighteen hundred and sixty-six, as amended by the Acts of eighteen hundred and sixty-eight and eighteen hundred and sixty-nine, and to alter and amend an Act entitled 'An Act granting lands to aid in the construction of a railroad and telegraph line from Portland to Astoria and McMinnville, in the State of Oregon,' approved May fourth, eighteen hundred and seventy, and for other purposes*" (June 9, 1916, Chapter 137, 39 Stat. 219). Provided authority for the Secretary of the Interior to classify as powersite lands within the revested Oregon and California railroad grant. Withdrawals made utilizing this authority were titled Waterpower Designations.

- "*An Act To accept from the Southern Oregon Company, a corporation organized under the laws of the State of Oregon, a reconveyance of the lands granted to the State of Oregon by the Act approved March third, eighteen hundred and sixty-nine, entitled 'An Act granting lands to the State of Oregon to aid in the construction of a military wagon road from the navigable waters of Coos Bay to Roseburg, in said State,' commonly known as the Coos Bay Wagon Road grant, to provide for the disposition of said lands, and for other purposes*" (February 26, 1919, Chapter 47, 40 Stat., 1180). Provided for designation as powersites in the reconveyed Coos Bay Wagon Road grant according to procedures in the Act of June 9, 1916 (Chapter 137, 39 Stat., 219). Withdrawals made under this authority were titled Waterpower Designations.

The new administration had succeeded in the goal of gaining Congressional approval of the policy of withdrawing waterpower and reservoir sites. Note that the actions authorized different responses. The actions on Indian Reservations authorized the Secretary of the Interior to make the withdrawal. In reality the Indians and their reservations were under policy deliberations and experiments during this time. However, the USGS made the investigations and withdrawals from the same scientific, objective, fact-finding perspective and diligence as the Executive withdrawals.

It was certainly established that waterpower and reservoir sites were to remain the property of the U.S.. As with the National parks, the policy offered administration challenges. The rights-of-way Act of 1901 left the authorization of power to the executive departments administering the land. "*To safeguard the public interest, these permits were revokable at the discretion of the executive department making them. Such uncertainty of tenure made financing difficult and expensive and was seriously objectionable to private enterprise, so only a few developments were made, despite the enthusiasm for "white coal" that was created by the conservation movement*" (Follansbee, 1939, page 96). More legislation was needed and is described as administration legislation.

## ADMINISTRATION LEGISLATION.

### Operational Legislation.

The recommendations for the utilization of the nation's resources were not yet in place, even as Congress passed legislation for their protection. There was a need for policy and guidance on the administration of resources policy. One of the debates on administration focused on how they should be developed. Public development was weighed against development by the Reclamation Service or the Corps of Engineers. That debate is still continuing, and is beyond the scope of this document, but what was solved was how private developers could develop national dams. The debate centered on ownership, rights-of-way, or leasing. The second debate concerned resolution of conflicts between resources. The debates were prolonged by the war, and eventually were wrapped up in one act called the Federal Water Power Act of 1920.

As early as 1910, the problem was being defined. In the Secretarial Report, Ballinger "*asked for adoption of some form of legislation that would retain the fee title to water-power sites in the people and vest the power of regulation and control in either the State or the Federal Government in such a way as not to limit prompt and economical development or permit monopolization or extortion*" (Rabbitt, 1986, page 114).

"*In November 1912, Woodrow Wilson was elected President, the first Democrat to hold office since Grover Cleveland*" (Rabbitt, 1986, page 138). In anticipation of the change in administration and new priorities, the Survey published a bulletin entitled The Classification of the Public Lands. This publication, USGS Bulletin 537, was written to present '*a full statement of the policy of land classification and a detailed description of the procedure and methods so far found necessary to carry out that policy in the stage of development already reached*'" (Rabbitt, 1986, page 139). The statement was made earlier that the USGS remained under stable Directorship during the administrative changes. The Director of the USGS, George Otis Smith served Secretary Ballinger as well as he had served Garfield. Originally, Smith distrusted the new Secretary, but being unemotionally scientific by nature, soon agreed with the efficient procedures and responsible administration. Smith was in an excellent position to give first-hand understanding of the policy administration, and is his opinions that are being used as the anchor for this document.

The new administration brought in a new Secretary of the Interior, Franklin K. Lane. "*Secretary Lane's first annual report in November 1913 was devoted almost entirely to public-land policy. The 'old' policy he characterized as land is land save when it contains minerals and let's dispose of it as quickly as possible. The 'new' policy called for the land to be used for the purpose to which it was best fitted and to be disposed of with respect to that use. The West had accepted the necessity of the new policy; it did, however, ask action so that the lands could be used*" (Rabbitt, 1986, page 144).

The public involvement in the use or development of the waterpower and reservoir resources focused on leasing and "separation of values and title." The headings used to find further discussion are "Split Estate" and "Leasing."

Smith, in his annual report submitted to the Secretary of the Interior in the fall of 1911, pointed out from the USGS's experience that he had developed an opinion on public-land laws based on both field conditions and administrative experience. It was his belief that:

> "*The objects to be sought by amendment of the public-land laws are first, purposeful and economical development of resources for which there is present demand, with retention of such control as may insure against un- necessary waste or excessive charges to the consumer, and second, the reservation of title in the people of all resources the utilization of which is conjectural or the need of which is not immediate.*"

"*Smith suggested that legislation to permit the separation of surface and mineral rights, wherever the two had values that could be separately utilized, should be the first step in amending the land laws. Such separation, already applied to coal deposits, should be extended to oil, gas, and phosphate lands. Similar legislation should reserve to the Government the exclusive right to grant easements for the future development of water resources, for either power or irrigation, and at the same time make provision for grants of surface patents for agricultural use of the land or of mineral patents where mining would not interfere with water-power development*" (Rabbitt, 1986, pages 126-127).

Split Estate. A unique twist has been applied to waterpower and reservoir withdrawals. The Federal Water Power Act of 1920 allowed the separation of the waterpower values from surface ownership. This was a parallel to the mineral industry's split estate. The object was to reduce the burden of retention of the waterpower sites. If the sites were to be developed by private industry and yet retained in Federal ownership the estates has to be separated.

Professor T. C. Chamberlin, Professor of Geology at the University of Chicago and the Geologist-in-Charge of the USGS's Section of Glacial Geology, in the fall of 1910, pointed out that conservation and ownership were separate issues.

> "*The protection of natural values against wastage is one thing, the possession of these values quite another thing. The best conservation may not be correlated with the best ownership, all things considered. Ownership, desirable on other accounts, may be an obstacle to conservation, and ownership, otherwise undesirable, may be tributary to conservation. This is so because, in their fundamental nature, the problems of conservation and the problems of possession are distinct questions, each to be solved in its own way and on its own basis. They center in separate fields. The conservation of natural resources centers in the scientific and technical; the right of ownership and the most desirable distribution of ownership center in the political and the sociological*" (Rabbitt, 1986, page 114).

Smith explained the need for a split estate because of the embarrassment encountered when carrying out the withdrawal policy when there was a conflict of resources.

> "*If valuable water-power or reservoir sites were invariably valueless for farming, or if mineral and agricultural values could not coexist, no hardship would be imposed by and no retardation of development would result from the making of withdrawals. But some of the best farming lands in the West are underlain by coal or phosphate, and some are so situated as to be of strategic importance in power development. Any hindrance to bona fide home building or other agricultural development of the public domain is indeed unfortunate, but in order to protect the public's natural resources withdrawals resulting in such hindrance have been necessary*" (Smith, 1913, pages 45-46).
>
> "*In one tract--for example, agricultural land that is underlain by coal--both resources may be utilized at the same time without interfering with each other. In another tract--for example, agricultural land within a reservoir site--the land may be valuable for one resource only until it is utilized for another. In the first case the problem is so to frame the laws that no resource will be forced to await the development of the other. In the second case the problem is to permit the use of the land for one purpose pending its use for another without losing public control of the development of the second. In both cases the answer is found in a separation of estates. The extension of this principle, now applied to coal, to withdrawn and classified minerals and to the uses of water resources would permit the retention of the mineral deposits and power and reservoir sites in public ownership pending appropriate legislation by Congress without in any way retarding agricultural development*" (Smith, 1913, pages 46-47).

Using examples from the provisions of the separation acts of March 3, 1909 (35 Stat., 644) and June 22, 1910 (36 Stat., 583), Smith comes very close to describing the provisions of Section 24 of the Federal Water Power Act of 1920. This was not foretelling, it was the recommendation that was adopted. Specific topics included the reservation of the resources in the patent title and the payment of damages to the surface owner in the event of development.

Smith makes further arguments for the split estate in the arguments for further legislation.

> "*In order that the classification of land as chiefly valuable for the development of power may be made effective, it appears desirable that there be additional legislation providing for the control and utilization of land so classified under such conditions and regulations as Congress may decide to be necessary and for the proper administration of such land if, as now seems desirable, the title is to be retained in the United States.*
>
> "*As a feature, or perhaps as a preliminary step in such legislation, a 'separation act' would be desirable, providing for the disposition of power and agricultural estates independently of each other in a manner similar to that now provided for coal land and for oil and gas land in Utah. Such independent disposition of these estates is believed to be entirely feasible, because, except where reservoirs are provided, the land actually occupied by a power plant constitutes only a small part of the legal subdivisions on which*

*the dam, flowage, water conduits, power house, and transmission lines are located. The bulk of the land is available for agricultural or other use and may be largely so utilized without detriment to the power development.*

*"The alienation of the agricultural estate and the retention of the water-power estate in any land, with provision for payment of proper damages to the agricultural estate when the power is developed, appears to be practicable and desirable in the interest of the orderly development of the natural resources involved. In fact a separation of estates and a disposition of each estate as such appear to be desirable, even though it may be decided not to retain control by the United States of the water-power estate*" (Smith, 1913, page 177).

*"Whether or not a law providing for separation of the power estate is enacted, laws providing for the development of power on public land under such conditions that the industry would be materially encouraged and capital attracted would be most beneficial. The true purpose of power-site withdrawals is the use of valuable power lands primarily for developing power, not the withholding of such lands from any use. It is true that withdrawn lands are now available for use under the right of way acts, but they can be used for power development only under a permit revocable at will. Such a method is hopelessly inadequate and tends to discourage development*" (Smith, 1913, pages 177-178).

Leasing. A concurrent debate to the split estate was that of leasing the waterpower and reservoir sites. Leasing policy had to overcome past leasing experience with the Lead Mine experiments, and there were arguments that the lease would be limited to 50 years and then the development would be recaptured by the U.S..

Secretary Ballinger, in his annual report that accompanied President Taft's first annual message to Congress in December 1909, called for legislation "*if material progress is to be made in securing the best use of our remaining public lands.*" He noted that

> "*while development is the keynote, the best thought of the day is not that development shall be by national agencies, but that wise utilization shall be secured through private enterprise under national supervision and control*" (Rabbitt, 1986, page 102).

President Taft, in the 1910 State-of-the-Union Message, recommended that waterpower sites "*should be directly leased by the Federal Government for terms not exceeding 50 years or that the site be patented to the State in which it was situated on condition that the State dispose of it under similar terms*" (Rabbitt, 1986, page 115). Again, in December 1911, President Taft in the State-of-the-Union Message, called for Federal control of waterpower sites. As early as 1911, the Survey and the Department of Agriculture agreed on suggested waterpower legislation: "*lands valuable for water-power development should be leased for a fixed term, not to exceed 50 years, with moderate charges for use and occupancy of land, revocable only upon breach of condition or if consumers were charged excessive rates*" (Rabbitt, 1986, page 128).

The next several years were totally unproductive concerning the passage of waterpower administrative legislation. Congress pursued the preventative withdrawals, but debated a waterpower administration act. Almost every year legislation was introduced, but the change in administration and the World War I were priorities. By the end of the War and the next change in administration, the debates and compromises had been completed.

The debate continued over the concern over leasing. The advantages were described in the USGS Bulletin 537, where Smith states the advantages of leasing over rights-of-way.

> *"Nearly every student of the situation is agreed that the leasing system is far better than any other for disposing of natural resources"* (Smith, 1913, page 47).
>
> *"It is not only with relation to mineral deposits nor by comparison with a sale system that a leasing system is advocated. Leasing should replace the present permit system, under which rights of way across the public domain are granted for reservoir sites, power development and transmission, and irrigation works. Under the existing laws the right of way granted is either in perpetuity or is revocable in the discretion of the Secretary of the Interior. Both of these conditions are undesirable--the first because the resource passes forever beyond the direct control of the public, which thus becomes powerless to guard against, misuse, disuse, or monopoly; the second because the capital which is required in the construction of such enterprises is not sufficiently protected. Between the grant in perpetuity, which inadequately protects the public, and the revocable permit, which inadequately protects the capital invested, lies the lease, which adequately protects both. By leasing rights of way for a fixed period of years absolute control would periodically return to the public, while the investor would be secure for a period long enough for his investment to return a profit.*
>
> *"If a lease law is to be adopted certain provisions should be incorporated in it, whether it is for a single resource or for all. In the first place the end to be attained is not revenue for the Government but is rather the retention of control in the public. It would be a long step backward to return to the early policy of using the public lands as a means of Federal revenue, and any lease law enacted should be so framed as to encourage development, prohibit speculation, and add nothing to the cost of the resource to the consumer. The States in which the lands are situated should be compensated for the loss of taxes which they would suffer from the permanent retention of the fee to natural resources in the National Government. Doubtless the simplest way to accomplish this is to provide that a certain percentage of net receipts from leasing shall go to the State in which the lands are situated. The term of a lease should be long enough to permit profitable investment and development. It should not be longer than is necessary to furnish an adequate return on the amount invested"* (Smith, 1913, page 49).
>
> *"Whatever action Congress may decide to take regarding the natural resources now in public ownership should not be much longer delayed. The present withdrawals are a temporary expedient whose employment should be rendered unnecessary as soon as possible. It can not be economically advantageous to the country to have millions of acres of lands, valuable for petroleum, phosphate, or potash or for power or reservoir sites, absolutely segregated from all forms of disposal for an indefinite period. Some of*

*the lands have already been so withdrawn for nearly four years. Congress should be fully informed concerning all the factors to be considered, but it should also act promptly*" (Smith, 1913, pages 49-50).

"*On May 12, 1914, the Public Lands Committee, in its report on the leasing bill, endorsed the Leasing Plan. It would 'insure a proper development and an intelligent utilization of our mineral resources, without waste and without permitting monopoly or injustice to be pressed down upon those who would develop the West, or upon the interests of the public, who are entitled to reap the benefits*'" (Rabbitt, 1986, page 145). The Federal Water Power Act of 1920 incorporated the leasing provisions.

The debate also had an aspect on how to administer leasing without provisions for orderly planning. In his State-of-the-Union Message on December 8, 1914, President Wilson urged that provision be made for the development of a merchant marine and for passage of the leasing and waterpower bills, already passed by the House, by the Senate. He stated:

"*We have year after year debated, without end or conclusion, the best policy to pursue with regard to the use of the ores and forests and water power of our national domain in the rich States of the West, when we should have acted; and they are still locked up. The key is still turned upon them the door shut fast at which thousands of vigorous men, full of initiative, knock clamorously for admittance. The water power of our navigable streams outside the national domain also, even in the Eastern States, where we have worked and planned for a generation, is still not used as it might be, because we will and we won't; because the laws we have made do not intelligently balance encouragement against restraint*" (Rabbitt, 1986, page 158).

Finally in 1917, "*A draft of a comprehensive act to cover the development of water-power sites under Federal control was prepared by E.C. Finney, Chairman of the Board of Law Review of the Department of the Interior, George Otis Smith, N. C. Grover, Herman Stabler, and W. B. Heroy of the Geological Survey and O. C. Merrill of the Forest Service and filed early in December 1917 by Congressman Scott Ferris, Chairman of the House Public Lands Committee. ... In an effort to avoid the stalemate of previous sessions, President Wilson invited members of the committees involved to the White House and the House then established a Water Power Committee*" (Rabbitt, 1986, page 188).

"President Wilson told Congress in the State-of-the-Union Message on December 3, 1917, that it was

'*imperatively necessary that the consideration of the full use of the water power of the country and also the consideration of the systematic and yet economical development of such of the natural resources of the country as are still under the control of the Federal government should be immediately resumed and affirmatively and constructively dealt with at the earliest possible moment*'" (Rabbitt, 1986, page 188).

*"Congress also came to a decision, after many years of wrangling, on a water-power bill. The House passed its bill, essentially the same as that it agreed to in the previous session, on July 1, 1919. It then took 11 months more to get the bill through the Senate and the conference committee, but it was finally passed and sent to President Wilson on May 31, 1920, and signed by him on June 10. The Federal Water Power Act created a Federal Power Commission, composed of the Secretaries of War, Interior, and Agriculture, to issue licenses for the development of water power at sites on boundary waters navigable streams, on public land adjacent to streams having sufficient fall for power, and on headwater streams if the plants would affect the flow on navigable reaches of the river. Licenses were to be issued for specified periods, not to exceed 50 years, with an annual fee based on power capacity (i.e., the horsepower developed on-site)"* (Rabbit, 1986, page 212-213).

*"The Federal Power Commission was simply an interdepartmental commission rather than an independent agency, and it had only one employee, the Executive Secretary, O.C. Merrill. Merrill, Herman Stabler, of the Survey, and General Enoch Crowder of the Army Engineers drew up the regulations for administration of the act. They recognized that reliable and adequate records of streamflow would be required, and that responsibility for obtaining such records rested with the permittee and licensees. However, the records had to be collected by standard methods to make them acceptable to the varied interests involved in their use and interpretation, so as a general policy it was agreed that the streamflow records would be collected under the supervision of the Geological Survey but at the expense of the permittee or licensee. The arrangements for obtaining the records ranged from little participation by the Survey to complete performance by the Survey. The regulations also required that before the Commission could consider an application, the feasibility of the plan, its suitability to the particular site, and the financial ability of the applicant be determined. The three departments divided up the examinations--those on navigable streams were allotted to the War Department, those on public lands in the national forests to the Agriculture Department, and those on public lands outside the national forests to the Interior Department"* (Rabbitt, 1986, page 213).

The part of the Act of June 10, 1920, known as the Federal Water Power Act, that pertains to administration of national waterpower legislation is Section 24, which is quoted:

Section 24. *"Any lands of the United States included in any proposed project under the provisions of this Part shall from the date of filing of application therefor be reserved from entry, location, or other disposal under the laws of the United States until otherwise directed by the Commission or by Congress. Notice that such application has been made, together with the date of filing thereof and a description of the lands of the United States affected thereby, shall be filed in the local land office for the district in which such lands are located. Whenever the Commission shall determine that the value of any lands of the United States so applied for, or heretofore or hereafter reserved or*

*classified as power sites, will not be injured or destroyed for the purposes of power development by location, entry, or selection under the public land laws, the Secretary of the Interior, upon notice of such determination, shall declare such lands open to location, entry, or selection, for such purpose or purposes and under such restrictions as the Commission may determine, subject to and with a reservation of the right of the United States or its permittee or licensees to enter upon, occupy, and use any part or all of said lands necessary, in the judgment of the commission, for the purposes of this Part, which right shall be expressly reserved in every patent issued for such lands; and no claim or right to compensation shall accrue from the occupation or use of any of said lands for said purposes. The United States or any licensee for any such lands hereunder may enter thereupon for the purposes of this Part upon payment of any damages to crops, buildings, or other improvements caused thereby to the owner thereof, or upon giving a good and sufficient bond to the United States for the use and benefit of the owner to secure the payment of such damages as may be determined and fixed in an action brought upon the bond in a court of competent jurisdiction, said bond to be in the form prescribed by the Commission: Provided, That locations, entries, selection, or filings heretofore made for lands reserved as water power sites, or in connection with water power development, or electrical transmission may proceed to approval or patent under and subject to the limitations and conditions in this section continued*" (41 Stat., 1063).

The passage of this act fully endorsed the recommendations made by the Conservation movement as voiced by the public and Executive administration. The Act has been amended slightly, but new policy has not been significant. The demands, debates and compromises have been made resulting in a stable policy. The administration of the legislation has been the focus since the passage of the Federal Water Power Act, whose title has been shortened to the Federal Power Act (FPA).

Summary. The legislation of the Federal Power Act of June 10, 1920, was novel and significant legislation. In the times of changing policy perhaps the legislation had been discussed sufficiently that it was understood. However, currently the legislation seems difficult to understand in present political struggles. Therefore a simple summary is offered toward basic understanding.

By 1920 the policy was established that all Waterpower and Reservoir Resources were to remain under the control of the U.S.. The Federal Power Act provided that:

- The executive departments with land administration and dam building responsibilities were to administer the legislation.

- WRR values were separated from land ownership, in order to facilitate the keeping of them in Federal ownership.

- Private industry was provided the incentives to develop the sites, by long term leasing for profit rather than discretionary rights-of-way.

- When the initial lease expires, the rights of the initial developer also expires. As the WRR belong to the U.S., it is the prerogative of the U.S. to recapture the site or renegotiate new leasing agreements.

Regulations were framed and duties were shared by the Federal Power Commission (FPC). The responsibilities were extensive and the DOI has cooperatively worked with the FPC pursuing their responsibilities for the administration of the Act. Some administrative responsibilities unique to DOI that have not been alleviated include:

Checking each site proposal in each application for whether the proposal was best suited to that particular site. This was a function of the USGS transferred to the BLM.

Checking each site proposal in each application concerning the effects the proposed development had on other resources. Because the FPC included the Secretary for each land administration agency, concurrence by the affected agency was necessary.

Checking each site proposal in each application for current Land Status information by the BLM.

The responsibility for judging the suitability of proposed development and for the development's effect on other resources is discussed further. The responsibility for Land Status checking is a normal function of the nation's record keeper; BLM.

## LEGISLATION ADMINISTRATION.

The Secretary of the Interior's WRR responsibility for judging the suitability of proposed development is unique and requires unique preparation as described as Investigations. DOI's responsibility for resource balancing is shared with other land administration agencies and is discussed under the title Resource Balancing.

### Investigations.

One of the first assignments from the new Secretary of the Interior, Ballinger, in 1909, was the investigation of the administratively withdrawn land. Beginning that summer, field examinations were started to determine more exactly the waterpower value of the lands. Waterpower sites were to be investigated and new withdrawals were to be recommended. The task was completed in 13 months and the new withdrawals were site specific. However, in order to act as quickly as possible, the original withdrawals were screened by land status and consideration of <u>any</u> possible sites. "*Lands that had not previously been withdrawn were also withdrawn*" (Follansbee, 1938, page 249). This exercise by the USGS staff illustrates the need to categorize various functions

necessary for the administration of the waterpower and reservoir legislation. Even the acquiring of the necessary information can be categorized into inventorying, assessment, coordination, and withdrawals which are part of the investigation.

Administrative Cooperation. The USGS had been investigating reservoir sites since 1888, waterpower sites with State cooperation since 1897, Carey Applications since 1894, accomplished special investigations for the Secretary as part of their administrative philosophy, and the Reclamation Service had their own investigations since 1907. All of this information was important for land administration. As the administration of the lands was also under Ballinger's administration, he ordered the General Land Office to refer to the USGS for reports on applications alienating public land.

The preventative, reactionary withdrawals made before the lands were opened to the public introduced a different administrative function. The philosophy of making withdrawals before settlement was actually initiated by Secretary Ballinger, when administratively he directed the General Land Office to seek resource reports before alienating lands. It was a continuing reflection of the land administration practices needing resource knowledge beginning in 1796. However, now instead of seeking higher land prices, the General Land Office was required to withhold the title.

The administration of the legislated policy was becoming complicated. The inventory and assessment of sites was proactive and offered solutions to land management and national problems. The withdrawal of the lands caused other agencies to be reactive and defend the actions of the USGS. This administration action by Secretary Ballinger began the necessary interagency cooperation to "*administer the laws as he finds it.*"

"*In January 1912, the Secretary issued orders requiring the General Land Office to submit all entries and selections of public lands, other than those specifically excepted from reservation under the Pickett Act [June 25, 1910] and those under which a vested right had accrued, to the Survey for a report on their mineral or power values. On March 5, the Survey and the General Land Office came to an agreement on procedures. If the Survey reported the land to be without value for mineral, power, or reservoir resources, the Land Office would clearlist the case. If the Survey reported the land to have any of these values, the Land Office would give the applicant an opportunity to disprove the classification, and if he were unable to do so would proceed in accordance with the Survey's report. Where the Survey's information was too meager for a definite report, the Survey would give the Land Office such information as it had for use by the Land Office's field service*" (Rabbitt, 1986, page 133).

The legislation was forcing cooperation between agencies. The cooperation between the USGS and the BLM was no problem. The situation became more complicated with the passage of the Federal Water Power Act. Then cooperation was needed between Departments. The Federal Power Commission (FPC) was made independent in 1939, however cooperation was maintained. Administratively problems did occur. On July 20, 1966, a formal Memorandum of

Understanding was founded, outlining operational agreements between the FPC, the BLM and the USGS. The independent FPC, was incorporated into the Department of Energy in 1978, which has stressed the cooperation. Note that by Secretarial Order No. 3071, of January 19, 1982, the Secretary of the Interior transferred the entire Conservation Division of the Geological Survey, including the Waterpower function, to the new Minerals Management Service (MMS). Subsequently, December 3, 1982, Secretarial Order No. 3087 consolidated the Departmental's onshore minerals management function, including those in the MMS, to the Bureau of Land Management. The waterpower program was organizationally in the on-shore function, but not as a minerals management function. On February 7, 1983, BLM Director Robert Burford made a conscious decision to integrate the waterpower program into the BLM.

The legislative measures have caused the necessity of administrative cooperation. As government has grown, the administrative cooperation has become more difficult. The hardest strain was incurred by the placement of the FPC into the Department of Energy. This added another Departmental Secretary into the formula and has made coordination more complicated.

Waterpower and Reservoir Resources Inventory. As Congress worked out legislation of the policy, the workload changed within the USGS. Knowledge of streamflow was necessary for the investigation of reservoir sites. The USGS was already making topographic maps. A field reconnaissance then confirmed the inventory of possible specific reservoirs for irrigation. When waterpower became technologically advantageous and policy was being developed, the USGS began making river surveys to classify possible waterpower sites. The Roosevelt administration requested trouble-shooting for specific areas needing water utilization solutions. A Federal construction program was started (June 17, 1902, Chapter 1093, 32 Stat., 388-391), for irrigation dams, which became multi-purpose dams. Policy was established that dams should be multi-purpose and remain in Federal ownership. The USGS made the first inventory of undeveloped waterpower. The USGS inventoried the sites and lands for the Temporary Power Site Reserves. Throughout the 22 years between 1888 and 1910, the USGS had provided Congress with an independent assessment of scientific values without the influence of politicians, promoters or antagonists. The two Acts of June 25, 1910, conferred permanent authority to keep up the good work, but also expanded the task.

Legislation was creating change, and by the time of the Acts of June 25, 1910, there was a material change in the amount and type of work. To the USGS staff "wearing two hats," the new charge must have seemed overwhelming. In response, a Division of Water Utilization was created to handle the new work load. The new Division was described:

> "*The investigations of water-power sites, rights-of-way, etc., was first performed by the engineers of the division of surface waters in their measurements of stream flow. This plan, however, resulted in a division of interest in both kinds of work, so that neither received the attention that it required, even to the extent of the small allotments available for the purpose. A new division was therefore organized, the members of which gave their entire time to the land-classification work*" (Follansbee, 1938, page 250).

Administrative emphasis had shifted from planning at specific sites for development to serve a specific need, to planning the conservation of a specific resource. In total, Congress passed 14 legislative actions authorizing and directing the USGS to investigate waterpower and reservoir resources. These Acts are referenced here and are listed in the Appendix: March 3, 1979, 20 Stat., 394; March 20, 1888, 25 Stat., 618; October 2, 1888, 25 Stat., 526; June 21, 1906, 34 Stat., 355; March 3, 1909, 35 Stat., 781-815; May 13, 1910, 36 Stat., 367-368; June 1, 1910, 36 Stat., 456; June 20, 1910, 36 Stat., 564; June 25, 1910, 36 Stat., 847; June 25, 1910, 36 Stat., 858; March 3, 1911, 36 Stat., 1075; January 27, 1913, 37 Stat., 651; June 9, 1916, 39 Stat., 219; and February 26, 1919, 40 Stat., 1180.

From 1910 until the present time, the USGS and the BLM have diligently carried out the inventory of waterpower and reservoir sites. River surveys were continued into the 1970's and numerous volumes of Water Supply Papers, inventories and assessments have been published. The inventory and initial assessment that has been accomplished is an essential information foundation to further planning.

Preparation for Classification of Resources. Earlier the USGS's definition of classification was quoted from USGS Bulletin 537 (See page 11). The author was George Otis Smith, Director of the USGS during the time of the Interstate Waterways Commission, Governors Conference, and the National Conservation Commission. The classification of lands is the determination of the greatest value of each parcel of the remaining public lands. A scientific assessment of the value of each site and delineation of the lands involved is a precursor to establishing the value of each parcel. The administrative assessment required by the legislative acts was straightforward.

The Act of June 25, 1910, as originally submitted authorized the President to "classify" land in aid to administration, and to conserve the sites pending further legislation:

> "*... for public use, for examination and classification to aid in administering existing law; to conserve the public domain pending legislative action when in the judgment of the President public interest requires.*"

The Act as passed changed the language somewhat:

> "*... the President may, at any time in his discretion, temporarily withdraw from settlement, location, sale, or entry any of the public lands of the United States, and the District of Alaska, and reserve the same for water-power sites, irrigation, classification of lands, or other public purposes to be specified in the orders of withdrawals, and such withdrawals or reservations shall remain in force until revoked by him or by act of Congress.*"

There were certainly two functions implied: one of classification and one of holding title to the U.S. The "*authorization involved the classification of the public lands in order that those suitable for specific withdrawals might be designated*" (Follansbee, 1938, page 250).

The inventory of sites was a precursor to classification and the assessment of each site's value was the next logical function. The USGS in inventorying the sites made water measurements, maps, profiles, and assessments of each site's potential. This was a straightforward engineering function. But protection was needed for the sites for future generations.

Several of the 14 legislative actions calling for the investigation of sites also provided for the retention of the selected dams and reservoirs as property of the U.S.. There are 18 withdrawal action which are referenced here and are listed in the Appendix: October 2, 1888, 25 Stat., 526; August 30, 1890, 26 Stat., 391; March 3, 1891, 26 Stat., 1101; January 13, 1897, 29 Stat., 484; June 17, 1902, 32 Stat., 741; June 21, 1906, 34 Stat., 355; March 3, 1909, 35 Stat., 781-815; May 13, 1910, 36 Stat., 367-368; June 1, 1910, 36 Stat., 456; June 20, 1910, 36 Stat., 564; June 25, 1910, 36 Stat., 847; June 25, 1910, 36 Stat., 858; February 25, 1911, 36 Stat., 932; March 3, 1911, 36 Stat., 1075; January 27, 1913, 37 Stat., 651; June 9, 1916, 39 Stat., 219; February 26, 1919, 40 Stat., 1180 and June 10, 1920, 41 Stat., 1063.

Nine different types of withdrawals were made, each responding to specific legislation. The names are: Waterpower Classifications, Reservoir Sites, Temporary Power Site Withdrawals, Reservoir Site Reserves, Reclamation Withdrawals, Power Site Reserves, Indian Power Site Reserves, Waterpower Designations, and federal Power Projects. By 1907 the Reclamation withdrawals were taken over by the Bureau of Reclamation. Effectively immediately, the Federal Power Commission administered the Federal Power Project withdrawals. The remaining withdrawals were administered by the USGS, now the BLM. The actions taken were named from the legislative nomenclature used in the act that authorized the classification. Each action was numbered and entered into a log of actions. This group of actions was often called "classifications."

Utilizing the Federal Water Power Act in combination with the Classification Act of 1879, the Geological Survey made Waterpower Classifications. This action deserves a historical discussion. Already mentioned was the request by Secretary Ballinger in December 1909, "*that specific legislative authority be given the Department to classify and segregate public lands into well defined divisions according to their greatest apparent use*. Interestingly, he stated "*that the Survey had undertaken such classification through the general authority given in its Organic Act, but that full legal effect should be given to such classification so as to prevent the entry of lands belonging to one class under laws applicable to another class.*" He further asked for a measure "*to authorize classification of all lands capable of being used for water-power development and disposal of such lands under conditions reserving title to the Federal Government ...*" (Rabbitt, 1986, page 102-103). The Federal Water Power Act of 1920 accomplished this request:

> "*Provided further, That before any lands applied for, or heretofore or hereafter reserved, or classified as power sites, are declared open to location, entry, or selection by the Secretary of the Interior, ...*"

This phrase gives the same administrative rights to classifications as to reservations or temporary withdrawals made by the President. This provided the greatest flexibility for the industry as well as the land managers.

The USGS has made the assessment of waterpower and reservoir sites in preparation for classification.. The USGS and BLM have made and reviewed many of the classification actions that are now considered withdrawals by the language in the Federal Land Policy and Management Act (Public Law 94-579, October 21. 1976, 90 Stat., 2743). Without discussing this legislation further, it is sufficient to note that changing the definition of a withdrawal does not change the original intent of former legislation. The original intent was that there would be a dynamic classification of lands resulting in permanent withdrawals as information, negotiations, and practices formed the ultimate sites that must be reserved.

Permanent Withdrawals. As already mentioned, part of the conservation policy was a resource preservation and an anti-monopoly measure. The task of inventorying possible sites and making an assessment of their potential is not completing the assignment. The USGS classified much of the larger sites in the inventory but the there is more to the function than inventory and assessment. Planning is necessary to prune the classified sites down to the essential sites. It is the essential sites that require permanent withdrawals.

Bulletin 537 describes the dynamic process needed for modifying the existing classifications or reservations.

> *"When results of field investigation are available, much the same procedure is followed in the office in revising withdrawals as in making the preliminary withdrawals. The problem at this stage becomes one of limiting the withdrawals to the least possible area. Careful scrutiny of plans and profiles of the streams makes it possible to determine the power value of each smallest legal subdivision, and withdrawn areas containing no sites that are or may be valuable for the development of power are restored to the public domain. If the stream is of relatively flat gradient, where power development must be restricted to the low-head type and the construction will consist of power houses in conjunction with dams developing the available head, it is possible in many cases to locate definitely the favorable dam sites and divide the stream into successive units of probable development, from which no very great departure in construction is likely. On such streams the power-site reserves can be defined with a high degree of accuracy, and the use of each tract, whether for dam site, power-house site, flowage, or other purpose, can be forecast with considerable assurance. A minimum area of land is retained in power-site reserves on such streams. If the stream has a relatively steep gradient, however, where the natural development for power will consist of a low diversion dam and a long conduit leading to a power house perhaps several miles below and developing a high effective head, there can be a wide range of selection for the units of a comprehensive power project. On such a stream no specially favorable dam site is necessary, and relative expense of construction is generally the factor determining a*

*choice among several different locations for the conduit. A definite use for any particular tract can seldom be assigned with development of this type, and the power-site reserve must be maintained so as to include all possible conduit locations if it is to be effective. A final revision of withdrawals along such a stream must be made as the power sites are developed. Even in such cases, however, restorations are frequently possible as soon as field examinations are made*" (Smith, 1913, page 174).

Smith is focusing in on the discovery, inventory, assessment and classification phase of the process. Withdrawal review has been a part of the process whenever new information is available. But the permanent site location is also dependent on "control." Reservoirs are created by building a dam to control water in a natural geographic basin. Their purpose is to capture high streamflows, store water, and then release it at a more desirable time, thus "controlling" flow in a stream. When the purposes of retaining title to the U.S. contain the policy "for future generations" and "anti-monopoly," the sites can be screened to those sites that could be used to control the stream. It is believed that the sites that are large enough to provide control must be retained.

Other factors must also be considered. Potential economical reservoir sites are dependent on natural physical conditions such as topography, hydrology, and geology, and on reservoir size. Size depends on the amount of control desired, available financing, and political support. When combined, these factors severely restrict reservoir locations. As a result, sites are finite in number, fixed in position, and increasingly scarce. The economical sites that provide desired benefits should be retained, but their development should be encouraged.

Administratively, Hydraulic Engineers can screen the sites according to the amount of control the reservoirs provide. Combination of sites and accumulative effects must also be considered. The results of this assessment as judged by an engineer should be sufficient for retaining the dam sites in Federal ownership. The process was described in USGS's Water Supply Paper 636 in 1929:

"*The power-site value of each individual tract of public land depends upon the use that would be made of that tract if the river system were developed as a whole in an efficient and economical manner. Scientific classification of any tract of land with respect to power therefore requires a study of the river as a whole, including the tributaries, and the formulation of a comprehensive plan of development.*

"*In the light of information so obtained an outline of a comprehensive plan of development for the whole stream is prepared, and later the suggested plan can be perfected by detailed field work, such as the selection, engineering, and geologic examination and survey of dam sites, reservoirs, and other critical features.*

"*A plan for development, which may include one or more alternative schemes is then formally outlined in a report that is essentially a compilation and study of all the data previously collected. On the basis of such reports the public lands are classified as to their probable use for power, whether for conduits, reservoirs, dams, power houses, or other possible uses, all practicable alternative schemes of development being taken into*

*consideration. Though any plan of development proposed must be regarded as tentative in detail and subject to modification in the light of further and more intensive studies made as a preliminary to construction, such a tentative plan can be used with assurance as a basis for estimating the potential power of the river, for locating the principal concentrations of potential power, and for guiding further studies undertaken for the purposes of actual development*" (USGS, 1929, pages 222-223).

Thorough planning requires that the sites must proceed through a classification process or be compared to other resources. As long as a site maintains its position as the highest use for the land, the site shall remain in Federal ownership. Once other higher resource values have been established, Congress prohibits the development of the minor, secondary development. Often though, the higher value retains the title in the U.S. and the sites are still available if the situation changes.

Two fairly recent examples of this process would be Congressional enactment of the original Wilderness Act and the Wild and Scenic Rivers Act.

- "*An Act To establish a National Wilderness Preservation System for the permanent good of the whole people, and for other purposes*" (Public Law 88-577, September 3, 1964, 78 Stat. 890). Known as the Wilderness Act. The President may authorize "*prospecting for water resources, the establishment of reservoirs, power projects, transmission lines, and other facilities needed in the public interest.*" In essence, Wilderness and waterpower and reservoir resource values are not incompatible, and there is an appointed "judge" empowered to decide on the proposed development. Other Acts have designated the Secretary of Agriculture as the judge.

- "*An Act To provide for a National Wild and Scenic Rivers System, and for other purposes*" (Public Law 90-542, October 2, 1968, 82 Stat. 906). Known as the Wild and Scenic Rivers Act. The established policy of dams needs to be completed by a policy that would preserve other selected rivers in their free-flowing condition. The Federal Energy Regulatory Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line or other project works on or directly affecting any designated areas. In all planning for development of water resources, consideration shall be given by all Federal agencies involved. This act requires that other effected resources remain identified.

The statements quoted earlier by Secretary Ballinger, strongly imply that Congress is still in control. The task of the administration is to administer the laws.

The results of land use planning and any Congressional legislation that prohibits the construction of waterpower or reservoirs require that the comprehensive plans be reviewed and revised if necessary. If any of the sites become unavailable for development, the remaining sites in the basin change in value, usually they become more valuable.

**Resource Balancing.**

Congress has placed responsibility for the multiple use management of all natural resources on the land management agencies. The legislation of the waterpower and reservoir policy has included unique responsibilities for the land administration agencies. They must balance opportunities, development, and protection of waterpower and reservoirs with other natural resources. They have responsibilities for balancing waterpower and reservoir resources with other resource values. They have the power to tell the Federal Energy Regulatory Commission regulatory requirements for planning, construction and operation. They have right-of-way issuance requirements for the construction and occupancy of the dams and reservoirs.

At one time, the responsibilities of comparing resource values and determining the highest values of the land was called "classification." True classification, or establishment of the highest value of each parcel of the remaining public lands, requires conflict resolution, planning, and regulation. Congress has established some priorities and certain administration choices are easy. When the values are not clear the land administration agencies must apply resource balancing. While guided by scientific facts, the resources must be compared and an administrative course of action chosen.

Classification requires that when considering the value of developing a potential reservoir site, the value of the site must be weighed against the value of other existing resources. This comparison helps to:

- Set priorities. Legislation has established some hierarchy as guidance.
- Identify the possibilities of reducing the effect of reservoirs on other resources.
- Provide a common forum for all resource information to be gathered and compared, so that the scientific evidence is used to determine alternative management actions.
- Provide for proactive, comprehensive planning which furnishes guidance for future actions.

The real meaning of classification is planning. The term classification is the older term, whereas the terms "conflict resolution" and "resource balancing" are current fashionable terms. The exercise needed for the true classification of each parcel is currently labeled "ecosystem management."

Administration Planning. The administration of the waterpower and reservoir legislation is best described as long range planning. The function of the USGS (now BLM) is the inventory, assessment, classification, withdrawal of the sites and information sharing. The information gathered by the BLM must be shared with all land management planners as the BLM is the "sole source." All land administration agencies must be the lead in the planning (classification) of the

lands they manage. This team (BLM and other land management agencies) must supply Congress with needed information for informed action, and furnish waterpower and reservoir developers guidance for the highest and best use of the land and resources.

> "*I cannot too strenuously insist on the importance of proper measures to insure a right disposition of our public lands, not only as a matter of present justice, but in forecast of the consequences to future generation.*"

President Grover Cleveland, December 1888 (Rabbitt, 1980, page 157)

Just as foresight and planning are required to guide industrial and residential developments away from the best agricultural lands and at the same time have as good, or superior, home or plant sites, so also must foresight and planning be used to preserve the resource sites that will be needed for by future public interests. The goals of waterpower and reservoir ownership are to locate, evaluate, and preserve resource sites, enhance resource values, encourage multiple-use of resources, complement other resource values, and minimize costs due to land use changes. To achieve these goals, classifications, reserves, and withdrawals must be closely associated with comprehensive regional planning and must adhere to the principles of economic efficiency and multiple use of resources.

"*The conservationists sought to establish a national water resources planning agency to coordinate the activities of all Federal agencies that were responsible for water resources and to prepare multipurpose plans for the nation's watersheds. The conservationists even succeeded in passing legislation in 1917 to establish a waterways commission to provide planning functions. However, World War I intervened before Congress appointed members to this commission; Congress terminated the commission in 1920*" (Frederick, 1991, page 34).

By 1920, the USGS had established Reservoir Sites, Waterpower and Reservoir Reserves, and Waterpower Designations under the direction of several legislative acts. The land administration agencies had control of the non-governmental development of the sites by at least a dozen specific right-of-way acts. The May 15, 1984, Supreme Court decision has the following insight into the necessity of the a new planning authority for WRR resources: "*In 1920, Congress passed the Federal Water Power Act in order to eliminate the inefficiency and confusion caused by the 'piecemeal, restrictive, negative approach' to licensing prevailing under prior law. Prior to passage of the Act, the Secretaries of Interior, War, and Agriculture each had authority to issue licenses for hydroelectric projects on lands under their respective jurisdiction. The Act centralized that authority by creating a Commission, consisting of the three Secretaries, vested with exclusive authority to issue licenses*" (U.S. Supreme Court, 1984, pg 7)

The debates had shifted from leasing of waterpower sites to planning for their development. The Supreme Court further states that: "*The Federal Power Act constitutes a* ***complete and comprehensive plan*** *... for the development, transmission and utilization of electric power in any streams or other bodies of water over which Congress has jurisdiction*

*under its commerce powers, and upon the public lands and reservations of the United States under its property powers*" (U.S. Supreme Court, 1984, pg 20). The planning for waterpower sites needed the information and interaction of the staff of each of the Secretaries: "*It is thus clear enough that while Congress intended that the Commission would have exclusive authority to issue all licenses, it wanted the individual Secretaries to continue to play the major role in determining what conditions would be included in the license in order to protect the resources under their respective jurisdiction. The legislative history concerning section 4(e) plainly supports the conclusion that Congress meant what it said when it stated that the license 'shall ... contain such conditions as the Secretary ... shall deem necessary for the adequate protection and utilization of such reservations*'" (U.S. Supreme Court, 1984, pg 9).

Further, the Supreme Court is clear that the planning is not limited to the waterpower site itself. "*... the Commission's authority and responsibility under section 10(a) to determine that "the project adopted ... will be best adapted to a* ***comprehensive plan*** *... for the improvement and utilization of water-power development, and for other beneficial uses*" (U.S. Supreme Court, 1984, pg 12). "*Even if the Commission is not required to comply with all of the requirements of section 4(e) when it issues such a license, it is still required to shape the license so that the project is best adapted, among other things, for the improvement and utilization of water-power development and for "other beneficial purposes, including recreational purposes. In complying with that duty, the Commission is clearly entitled to consider how the project will affect any Federal reservations and to require the licensee to structure the project so as to avoid any undue injury to those reservations*" U.S. Supreme Court, 1984, Pg 18).

This 1920 Federal Water Power Act served as an umbrella planning act until 1956 when the Water Resources Planning Act was passed. This act was aimed at coordinated planing and was followed by several other planning acts. Two such acts mandated planning by the two most recognized land management agencies, the BLM and Forest Service:

- "*An Act To provide for the Forest Service, Department of Agriculture, to protect, develop, and enhance the productivity and other values of certain of the Nation's lands and resources, and for other purposes*" (Public Law 93-378, August 17, 1974, 88 Stat. 476-480). Known as the Forest and Rangeland Renewable Resources Planning Act of 1974. The Secretary of Agriculture shall prepare a Renewable Resource Assessment, a comprehensive and appropriately detailed inventory of renewable resources, and develop land management plans.

- "*An Act To establish public land policy; to establish guidelines for its administration; to provide for the management, protection, development, and enhancement of the public lands; and for other purposes*" (Public Law 94-579; October 21, 1976, 90 Stat. 2743). Known as the Federal Land Policy and Management Act of 1976 (FLPMA). Repealed some of the above Acts, provides the authority for the Secretary of the Interior to make, modify, revoke, and review and extend withdrawals, and precludes delegation of this authority to heads of bureaus and offices.

Each of these acts with its amendments has requirements for systematic conflict resolution as part of land use planning. These acts followed the Water Resource Planning Act and the National Environmental Policy Act of 1969. They are listed for reference:

- "*An Act To provide for the optimum development of the Nation's natural resources through the coordinated planning of a water resources council and river basin commissions, and by providing financial assistance to the States in order to increase State participation in such planning*" (Public Law 89-80; July 22, 1965, 79 Stat. 244-254). Known as the Water Resource Planning Act, it was an attempt to remove the "pork barrel" approach to WRR development by forcing a systematic planning process.

Candidly, the administration of the Water Resource Planning Act has been a failure. Although the basic decisions of the Water Resources Council are still effective, the actual planning collapsed. The Water Resources Council and River Basin Commissions have been abandoned and planning seems to have ignored waterpower and reservoir resource considerations. This is unfortunate, because waterpower and reservoir sites continue to offer positive solutions to resource problems because of their unique values.

Without proper administration, the results of resource balancing simply became a forum for special interest groups. Administrative decisions based on the scientific facts were not completed. Reflecting on Professor Chamberlin's comment, the conservation of resources was being confused with the right of ownership. The funding for the administration of the legislation was withdrawn resulting in no compliance enforcement. However, the results of the operational efforts for planning under this act is beneficial to the Secretary of the Interior for its planning efforts.

- "*An Act to establish a national policy for the environment, to provide for the establishment of a Council on Environmental Quality, and for other purposes*" (Public Law 91-190, January 1, 1970, 40 U.S.C. 4321-4347). Known as the National Environmental Policy Act of 1969 (NEPA). This act requires systematic, interdisciplinary, cooperation and planning and pertains to the private development proponent, land management agency and the Federal Energy Regulatory Commission (FERC). FERC is the new name of the Federal Power Commission after it was made part of the Department of Energy.

The National Environmental Policy Act, has gained strength through its amendments and administration. The Environmental Protection Agency, formed from provisions of the Act, has become a planning enforcement agency. One enforceable phrase that keeps waterpower and reservoir resources from being ignored is found in the provisions of NEPA. It states the reasons for combining planning efforts. The land management agencies must consider integration of their land administration planning with rights-of-way planning.

Part of the planning process is the inventory, assessment, comprehensive plan for the basin, and classification or planning withdrawals for waterpower and reservoir sites, all functions of the BLM. It is long range planning. In summary the function's purpose is to prohibit the general public from obtaining control of the sites, to prohibit land management practices from ruining them, and therefore keep them available if and when they are needed, and under Federal control. An example of the need for Federal control to prevent construction occurred in Alaska. The potential Rampart Damsite is a significant constriction on the Yukon River. At the location, a constructed dam has the capability to overflow close to 9,000,000 acres of the Alaskan inland. Congress made a conscious decision that the dam should not be constructed. All of the lands in the reservoir are administered without regard to their potential for flowage, but the dam itself is in withdrawal as a classification aiding in land administration.

The three planning acts (Forest and Rangeland Renewable Resources Planning Act of 1974, Federal Land Policy and Management Act of 1976, and National Environmental Policy Act of 1969) offer an opportunity to bring further information into the waterpower and reservoir planning process. The comprehensive plan shall be updated reflecting lost opportunities before withdrawal adjustments are made.

Regulation. Congress is the boss. Throughout history Congress has reserved the prerogative to authorize the planning, regulation, construction, operation, and future of waterpower and reservoir resources. Legislation has been passed forming planning, regulation, and construction agencies, as well as legislation authorizing planning, construction and operation of specific damsites.

Congress established the policy that the construction of a dam on Federal land requires authority to develop waterpower and reservoir resources. The Corps of Engineers (COE), Bureau of Reclamation (BOR), Soil Conservation Service (SCS), and the Tennessee Valley Authority (TVA) are the more recognized construction agencies. They were all given their authority by Congress. Congress also provided for non-Federal entities to develop hydroelectric dams under the provisions of the Federal Power Act. The administration agency created to authorize the non-governmental planning, regulation, construction, operation, and future of private development of waterpower and reservoir resources is the Federal Energy Regulatory Commission (FERC).

The intent of Congress is that the FERC does not consider its responsibilities apart from all other planning efforts. The original interdepartmental commission, with their individual responsibilities, was the FERC. Recently the role of the original interdepartmental commission, i.e., the Secretaries of Agriculture, Defense and the Interior, was clarified in regard to the Department of Energy's Commission. The action was litigation and the guidance came from the May 15, 1984, Supreme Court decision concerning ESCONDIDO MUTUAL WATER COMPANY, ET AL, PETITIONERS *v.* LA JOLLA, RINCON, SAN PASQUAL, PAUMA AND PALA BANDS OF MISSION INDIANS, ET AL. The essence of the decision was that under the Act of June 10, 1920 (Federal Power Act; Chapter 285, 41 Stat. 1063; 16 U.S.C. 791-823), the Secretary of the Interior would remain responsible for a major role in determining what

conditions would be included in order to protect the resources under their respective jurisdiction. Under the provisions of Section 4(e) of the Federal Power Act, the FERC shall include the conditions the Secretary deems necessary. The act states:

> "*Provided, That licenses shall be issued within any reservation only after a finding by the commission that the license will not interfere or be inconsistent with the purpose for which such reservation was created or acquired, and shall be subject and contain such conditions as the Secretary of the department under whose supervision such reservation falls shall deem necessary for the adequate protection and utilization of such reservation*"

The FERC has regulation authority over waterpower development, but they are obliged to other agencies responsible for land and resource management. This statement is a generalization of policy, but the statement provides background for the Secretary of the Interior's responsibility.

The Secretary of the Interior has the responsibility for inventorying, assessment, and reservation of waterpower and reservoir sites. By the provisions of Section 4(e) of the Federal Power Act, the FERC must conform their licenses to be consistent "*with the purpose for which such reservation was created*" and their licenses "*shall be subject and contain such conditions*" as the Secretary of the Interior "*shall deem necessary for the adequate protection and utilization of such reservation.*" This was paraphrased to emphasize the importance of the reservations and the control they give to the Secretary of the Interior.

However, withdrawals or rights-of-way must be granted before the land can be occupied for construction. In order to protect their interests, developmental agencies require a withdrawal or right-of-way.

Congress has provided BOR and COE with the right, based on approval of individual projects, to occupy the land on which to build a dam. Non-Federal entities may occupy lands by applying to land administration and State agencies to study or construct a dam, or to FERC if the dam is to be hydroelectric. This creates an automatic withdrawal. FERC requires an application and compliance with their licensing agreement for dams equipped with hydropower options. FERC depends heavily upon land management agencies and resource specialists in monitoring construction and operation for compliance. This means that land management agencies have the authority to shape FERC licenses for the protection of other existing resources.

Right-of-way. Since 1866, Congress has legislated 14 specific actions controlling the granting of rights-of-way for waterpower and reservoirs. The latest is "*An Act To provide for improved energy efficiency*" (Public Law 102-486; October 24, 1992, 106 Stat., 2776). Known as the Energy Policy Act of 1992.

NEPA (Public Law 91-190, January 1, 1970, 40 U.S.C. 4321-4347), requires that the administration of the rights-of-way authority be consistent with land use planning. The administration of this authority must comply with the national policy that the sites are property of the U.S. and their unique values must be developed for public interests. These Acts are referenced here and are listed in the Appendix: June 12, 1866, 14 stat., 64; July 26, 1866, 14 Stat., 253; July 9, 1870, 16 Stat., 217; March 3, 1875, 18 Stat., 483; March 3, 1891, 26 Stat., 1101; January 21, 1895, 28 Stat., 635; May 14, 1896, 29 Stat., 120; February 26, 1897, 29 Stat., 599; May 11, 1898, 30 Stat., 404; March 3, 1899, 30 Stat., 1233; February 15, 1901, 31 Stat., 790; March 4, 1911, 36 Stat., 1253; March 4, 1915, 38 Stat., 1100; and February 5, 1948, 62 Stat., 17.

Some of the earliest waterpower withdrawals used the Right-Of-Way Act of February 15, 1901 coupled with "the general supervisory authority of the Executive." As early as 1913, USGS Director Smith pointed out that leasing had advantages to the government and would promote development. He recommended legislation for the leasing of waterpower and reservoir sites. The Federal Power Act of 1920 provides for the construction of waterpower sites, under the authority and license of FERC. Nobody has called the FERC license a lease, but it includes all of the recommendations for leasing as recommended by Smith. The classification, reservations, or withdrawals made by the Secretary of the Interior established the Department as the authority over the planning, resource balancing and regulation of the sites. The rights-of-way laws are a secondary authority to be used if needed.

**Reporting.**

Congress has requirements for information. They recognized the need for professional scientists to gather and furnish Congress and the public with vital information. Congress passed 16 legislative actions pertaining to the USGS's responsibilities to gather a depository of dam and reservoir information and report to Congress and the public. These Acts cover subjects that range from the collection of information to publishing for Congress, to publishing for the general public. The acts are referenced here and listed in the appendix: March 3, 1979, 20 Stat., 394; July 7, 1884, 23 Stat., 212; March 20, 1888, 25 Stat., 618; October 2, 1888, 25 Stat., 526; February 18, 1897, 29 Stat., 701; June 16, 1902, 32 Stat., 741; June 30, 1906, 34 Stat., 727; March 4, 1909, 35 Stat., 989; June 1, 1910, 36 Stat., 456; June 20, 1910, 36 Stat., 564; March 3, 1911, 36 Stat., 1075; June 10, 1920, 41 Stat., 1063; June 7, 1924, 43 Stat., 592; June 14, 1940, 54 Stat., 212; July 21, 1947, 61 Stat., 398; and June 4, 1954, 68 Stat., 173-175.

A partial listing of the more significant text includes:

- In the Act of March 3, 1879 (20 Stat. 394), The Director of the USGS was authorized to publish materials illustrating the resources and classification of the lands (43 U.S.C. 41). In the original text, these publications included reports, maps, and illustrations necessary for completing the office work.

- By a joint Resolution of February 18, 1897 (29 Stat. 701), the Director of the USGS is authorized and directed to distribute topographic and geologic maps and atlases of the U.S.. Copies of Maps and Atlases are to be sent to Senators, Representatives, and Delegates (43 U.S.C. 43).

- Another Joint Resolution on May 16, 1902 (32 Stat. 741), stated that the publications shall consist of professional papers, bulletins, water-supply and irrigation papers, and maps, folios, and atlases as may be required by existing law.

- On March 4, 1909 (Public, No. 328; Chapter 299, 35 Stat. 989; 43 U.S.C. 45), Congress authorized the collection of scientific periodicals for a library.

- The trend for acquiring scientific and technical books, maps etc. continued with "*An Act To authorize the Director of the Geological Survey, under the general supervision of the Secretary of the Interior, to acquire certain collections for the United States*" (May 14, 1940, Chapter 190, 54 Stat. 212, 43 U.S.C. 36a).

The remaining acts are requests for information resulting from a legislated investigation such as the Joint Resolution of March 20, 1888. When the Conservation Division and the waterpower and reservoir resources function was transferred to the BLM, the need for information remained. Note that the annual reports to Congress were the only relief of reporting requirements (Public Law 615; August 7, 1946, Chapter 770, § 10, 60 Stat. 867; 43 U.S.C. 41).

The BLM has acquired this collection of information with the transfer of responsibilities. It is a very unique collection of original and acquired documents pertaining to the waterpower and reservoir resources of the U.S. Some of the earlier collection is located in the National Archives, but the entire collection is available for examination.

## UNFINISHED BUSINESS

A challenge must be raised, that the administration of the policy of national ownership of the waterpower and reservoir resources has not been completed. The unfinished business is the lack of the comprehensive basin-wide plans called for by the Inland Waterways Commission and the Water Resource Planning Act. This planning should be guiding the merging of local and single purpose dams into a "*plan designed for the benefit of the entire country.*" These two topics, begging for attention are briefly presented. The first is the need for further guidance in the administration of necessary water resource planning, and the second is development of administration for the operation and control of dams after they have been constructed and return to national control.

**Planning.**

Similar to the anti-monopoly sentiment of the early part of the century, there seems to be an anti-pork barrel sentiment in the Nation today. The legislated Water Resource Planning Act of 1969 reflected the pressure of the sentiment on Congress. Earlier it was stated that this Act was an attempt to remove the pork barrel approach to WRR development by forcing a systematic, planning procedure. However, the administration of the Act, led to abuses of the Water Resources Council and funding was discontinued. Executive administration finally became involved when President Carter, by Executive Order, stopped most of planning for development. The concern over environmental issues, has caused several interest groups to attack dams and reservoirs as part of the environmental degradation. Without a strong advocate arguing the positive attributes of dams and reservoirs the image is carried that the interest groups are correct. And they have been correct in several of their claims where pork barrel projects have not had a positive ecological balance. The prevailing attitude today is that we will not build any more dams. Because Congress is reluctant to pass legislation authorizing specific dams, does not and should not be confused with the continuing process by the FERC to license new and relicense existing dams.

However, the argument must be presented that dams and reservoirs are built for national and public benefits. The Nation is facing water problems that may be solved only by a developmental alternative. The problems are not the subject of this document, but perhaps it is sufficient to note that one of the next major crises facing the nation today is water supply. The Nation's Water Resources, 1975-2000, which is the "Second National Assessment" accomplished by the U.S. Water Resources Council, published in December 1978, demonstrated the water problems in the regions of the U.S. A recent National Geographic Special Edition confirms that despite concern the problems worsen. The discontinuance of planning does not alleviate the problem, and in fact planning is necessary to prepare for the solutions.

The Secretary of the Interior has an administrative responsibility for planning that overlaps the charges of the Water Resources Council by the Water Resource Planning Act of 1969. However, it is Congress' responsibility to resolve the conflict. Until Congress does take action, it is recommended that the Secretary of the Interior continue to demonstrate the Department's ability to administer the legislation outlined in this document for the benefit of the public. The "boss," Congress, is continuing to voice a preference, by the continued funding to the Secretary of the Interior and the slashing of funding for the Water Resources Council.

**Operations.**

In 1908, the Inland Waterways Commission recommended that all dams and reservoirs should be used for multi-purposes, and that:

> *"While the rights of the people to these and similar uses of water must be respected, the time has come for merging local projects and uses of the inland waters in a*

*comprehensive plan designed for the benefit of the entire country*" (Rabbitt, 1986, page 69).

The anti-pork-barrel controversy today concerns the challenge that many of the reservoirs have been built and operated for single purposes. It is recognized that the normal economic practice is to pay the construction costs from the first fifty years of operation. This practice has necessitated the generation of extra revenue until the investment capital has been paid. The plans for the dams, their construction, and operations, etc., have required an operation scheme for the past 50 years. This practice has contributed to the image of dams and reservoirs that they are not responsive to environmental and changing public concerns.

Because of individual authorizations and the Federal Waterpower Act of 1920, the nation is enjoying problems of how to operate dams with their construction costs fully paid. These reservoirs are the property of the U.S. and subject to change of ownership, change of operation, or decommissioning if unneeded. Every year, there are dams and reservoirs whose licenses are expiring and other Federally constructed dams that become free of construction costs. The licenses and operational agreements are being reviewed and new operations are being requested without a Congressional administration policy in place. The agencies with natural resource protection and land administration responsibilities must be encouraged to become intimately involved with the decision on future operations because of the principle that they are property of the U.S. These dams are relieved of revenue-intensive operations and given an opportunity to operate for multi-purpose use.

The "Conference of Governors," (May 13-15, 1908) stated:

> "*The Conference adopted a 'declaration of views and recommendations' ... recommending the enactment of laws looking to 'the conservation of water resources for irrigation, water supply, power, and navigation, to the end that navigable and source streams may be brought under complete control and fully utilized for every purpose*'" (Rabbitt, 1986, page 75).

The administrative recommendations made by the National Conservation Commission (outlined earlier) was submitted on January 22, 1901, by President Roosevelt with a message urging adoption. Subsequent legislative action was fragmented but several of the recommendations are contained in the Federal Power Act of 1920. The administrative recommendations that were not legislated then may yet be necessary, but Congress is not being encouraged to enact further legislation to guide the reassessment of operations of existing dams.

The scientific information that is necessary for a comprehensive plan can be generated within the Department of the Interior and is the responsibility the Secretary of the Interior. Administrative directives are needed charging that, 1) the classification process be completed through land use planning or ecosystem management, and, 2) that the selection of sites for permanent withdrawals be based on a basin-wide comprehensive scientific plan establishing which dams and reservoirs

are needed, and "*that navigable and source streams may be brought under complete control and fully utilized for every purpose.*"

Administrative directives are needed for focusing efforts toward more productive results. The Secretary of the Interior needs the results of comprehensive planning efforts addressing the waterpower and reservoir responsibilities, along with the selection of sites needing permanent protection.

## GLOSSARY OF TERMS

- C -

**classification** (*scientific*): The determination of the best and highest use of land based on their resource value by exact, objective, factual, and systematic methods.

**complete control** *(WRR technical)*: Having the necessary reservoir storage capacity to regulate streamflow at a given point. Measured by demonstration that the reservoir capacity could produce mean discharge over the period of historical flows.

-E-

**enhancement**: Actions that would improve some aspect of the existing environment. Usually enhancement is considered applicable after events have damaged the environment.

-F-

**fully utilized** *(WRR technical)*: Optimization of the operation of dams and reservoirs to achieve maximum benefits from existing available streamflows.

-I-

**interim use** *(WRR technical)*: A temporary use of land valuable for dams and/or reservoirs. The use can be authorized until the land is needed for the development of the reservoir.

-M-

**mitigation**: Actions planned to avoid, lessen, or offset the impacts of a proposed action that may harm some aspect of the environment.

-P-

**professional assessment** *(WRR technical)*: The acquisition of knowledge and understanding about the physical conditions of a potential or existing reservoir and the estimation of its value. This is accomplished by separation of the physical conditions for individual study in detail by an exact, objective, factual, and systematic method. The skills required for this assessment include surveying, map making, geology, hydrology, water rights, economics, hydroelectric power and alternative sources of energy, irrigation, industrial and domestic water supply and consumption, and trends in land use and planning. The assessment is accomplished under professional guidance and quality control. The professional personnel with the necessary skills required for these evaluations have been classified as Hydraulic Engineers.

- R -

**resources**: That which is, or may be, readily available as a source of supply or support; anything that can be drawn upon when needed, whether material or nonmaterial. (Resource Conservation Glossary, Third Edition, Soil Conservation Society of America, 1982.)

**resources, related**: Elements of supply that are dependent upon and reflect man's influence on natural resources, such as pastures of introduced species, plantation forests, cultivated crops, land modified for recreation, or developed water storage sites. (Resource Conservation Glossary, Third Edition, Soil Conservation Society of America, 1982.)

-W-

**water conservation**: The physical control, protection, management, and use of water resources in such a way as to maintain crop, grazing, and forest lands; vegetal cover; wildlife; and wildlife habitat for maximum sustained benefits to people, agriculture, industry, commerce, and other segments of the national economy. (Resource Conservation Glossary, Third Edition, Soil Conservation Society of America, 1982.)

**WRR Resources**: Undeveloped dams and/or reservoir locations available as a related resource for man to influence streamflow.

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## APPENDIX

References to the Statutes at Large in Chronological Order:

May 18, 1796, Chapter 29, 1 Stat., 464-469; R.S. 2395. "*An Act providing for the Sale of the Lands of the united States, in the territory northwest of the river Ohio, and above the mouth of Kentucky river.*"

"SEC. 2. ... Every surveyor shall note in his field-book the true situations of all mines, salt licks, salt springs, and mill seats which come to his knowledge; all watercourses over which the line he runs may pass; and also the quality of the lands."

"SEC. 3. *Be it further enacted*, That a salt spring lying upon a creek which empties into the Sciota river, on the east side, *** and every other salt spring which may be discovered, together with the section of one mile square which includes it, and also four sections at the centre of every township, containing each one mile square, shall be reserved, for the future disposal of the U.S.."

"SEC. 9. "*And be it further enacted*, That all navigable rivers, within the territory to be disposed of by virtue of this act, shall be deemed to be, and remain public highways." See Pages 4, 5, 7, 24.

March 3, 1807, Chapter 49, 2 Stat., 448. "*An Act making provision for the disposal of the public lands, situated between the U.S. military tract and the Connecticut reserve, and for other purposes.*" See Page 25.

February 23, 1822, Chapter 9, 3 Stat., 651. "*An Act for the preservation of the timber of the U.S. in Florida.*"

"*Be it enacted by the Senate and House of Representatives of the U.S. of America, in Congress assembled*, That the President of the U.S. be, and hereby is, authorized to employ so much of the land and naval forces of the U.S. as may be necessary effectually to prevent the felling, cutting down, or other destruction of the timber of the U.S. in Florida; and also to prevent the transportation or carrying away any such timber as may be already felled or cut down; and to take such other and further measures as may be deemed advisable for the preservation of the timber of the U.S. in Florida." See Page 25.

March 3, 1829, Chapter 54, 4 Stat., 364. "*An Act to authorize the President of the U.S. to cause the reserved salt springs, in the state of missouri, to be exposed to public sale.*" See Page 25.

April 20, 1832, Chapter 70, 4 Stat., 505. "*An Act authorizing the governor of the territory of Arkansas to lease the salt springs, in said territory, and for other purposes.*"

"SEC. 3. *And be it further enacted*, That the hot springs in said territory, together with four sections of land including said springs, as near the centre [sic] thereof as may be, shall be reserved for the future disposal of the U.S., and shall not be entered, located, or appropriated, for any other purpose whatever." See Page 29.

July 11, 1846, Chapter 36, 9 Stat., 37. "*An Act to authorize the President of the U.S. to sell the reserved mineral Lands in the States of Illinois and Arkansas, and the Territories of Wisconsin and Iowa, supposed to contain Lead ore.*" See page 25.

September 28, 1850, Chapter 84, 9 Stat. 521; R.S. 2478; 43 U.S.C. 1201. "*An Act granting Bounty Land to certain Officers and Soldiers who have been engaged in the Military Service of the U.S..*" See Page 15.

The BLM utilizes this legislation to issues Special Land-Use Permits for occupancy and use for purposes to which other statutes do not apply. These permits are subject to clearance with agencies having interests in designated lands, includes a standard power stipulation, and does not refer cases affecting power withdrawals to the Federal Power Commission.

August 4, 1852, Chapter 80, 10 Stat., 28. "*An Act to grant the Right of Way to all Rail and Plank Roads and Macadamized Turnpikes passing through the Public land belonging to the United states.*"

SEC. 3. ...: *And provided moreover*, That if any road, at any time after its completion, be discontinued or abandoned by said company or companies, the grants hereby made shall cease and determine, and said lands hereby granted, revert back to the general government:" See Page 16.

February 9, 1853, Chapter 59, 10 Stat., 155. "*An Act Granting the Right of Way and Making a grant of Land to the States of Arkansas and Missouri to Aid in the Construction of a Railroad from a point on the Mississippi opposite the mouth of the Ohio River, via Little Rock, to the Texas Boundary near Fulton, in Arkansas, with Branches to Fort Smith and the Mississippi River.*"

SEC. 5. ..., and if said road is not completed within ten years, no further sales shall be made, and the land unsold shall revert to the U.S.." See Page 16.

July 1, 1862, Chapter 120, 12 Stat., 489. "*An Act to aid in the construction of a Railroad and Telegraph Line from the Missouri River to the Pacific Ocean, and to secure to the Government the Use of the same for Postal, Military, and Other purposes*" See Pages 16, 17.

June 12, 1866, 14 Stat., 64. "*An Act to grant the Right of Way to the 'Humboldt Canal Company' through the Public Lands of the U.S..*" See Page 17, 74.

*Be it enacted by the Senate and House of Representatives of the U.S. of America in Congress assembled*, That the right of way for a canal through the public lands of the U.S. laying in Humboldt county, State of Nevada, and the use of the land for tow-paths, cuttings and embankments, to the extent of fifty feet on each side of the center of the canal, shall be, and is hereby, granted to the Humboldt Canal Company: *Provided*, That in cases where deep excavation or heavy embankment is required, such greater width, not exceeding two hundred feet, may be taken by said company as may be necessary.

SEC. 2. *And be it further enacted*, That in order to create a reservoir for said company sufficient to feed said canal in all seasons, and said company shall be, and is hereby, authorized, by a dam across the Humboldt river, at such point at or near the gap in the Fremont range of mountains through which said river passes, to flow so much of the public lands above said dam as may be required for the purpose of said reservoir.

SEC. 3. *And be it further enacted*, That there shall be and is hereby, granted to said company the necessary sites along said canal for waste-gates, mill-sites, depots, and other uses of said canal, so far as places convenient for the same fall upon the public lands, and also the privilege of discharging waste waters of said canal over any public lands into the Humboldt river, at such places as may be suitable for that purpose:
*Provided*, That the prover offices of said company shall transmit to the commissioner of the general land office a correct plat of the survey and location of said canal, and of the sites needed for mills, depots, waste-gates, and other uses of said canal, before the appropriation thereof for said uses shall become operative: *And provided further*, That unless thirty miles of said canal shall be excavated within one year, [and] the whole within three years, from the date hereof, the grants hereby made shall cease and determine: *And provided further*, That if said canal shall at any time after its completion be discontinued or abandoned by said company, the grants hereby made shall case and determine, and the lands hereby granted shall revert to the U.S.: *And provided further*, That nothing in this act shall be so construed as to interfere with any grant of the right of way and of public lands heretofore made to any grant of the right of way and of public lands theretofore made to may railroad company.

July 4, 1866, 14 Stat., 86. "*An Act granting Lands to the State of Oregon, to aid in the Construction of a military Road from Corvallis to the Acquinna Bay.*" See Page 27.

July 25, 1866, Chapter 242, 14 Stat., 239. "*An Act granting Lands to aid in the Construction of a Railroad and Telegraph Line from the Central Pacific Railroad, in California, to Portland, in Oregon.*" See Page 16.

July 26, 1866, Chapter 262, 14 Stat. 253; R.S. 2339 and R.S. 2477). "*An Act granting the Right of Way to Ditch and Canal Owners over the Public Lands, and for other purposes.*" See Page 17, 26.

The "original" right-of-way Act. Section 8 grants rights-of-way for construction of highways over public lands not reserved for public uses. Grants of right-of-way under R.S. 2477 become effective upon the construction or establishment of highways in accordance with State laws or over public lands not reserved for public uses (such as waterpower withdrawals). No application should be filed as no action on the part of the Government is necessary except in cases where the highway crosses revested and reconveyed lands or land reserved for public uses.

Section 9 of the act (R.S. 2339) granted rights to use of water for mining, agriculture, manufacturing, or other purposes. This act is the Organic Act for occupation for the development of hydroelectric power. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

July 27, 1868, Chapter 268, 15 Stat., 238. "*An Act granting the Right of Way to certain Railroad Companies over the military Reservation at Fort Leavenworth.*"

SEC. 2. ...: "*Provided*, That if the said company shall nor construct, within one year from the passage of this act, a railway from the city of Leavenworth to the city of Atchison, then, and in that case, a like privilege is hereby conferred upon any other company that shall construct a railway between said cities." See Page 16.

July 9, 1870, Chapter 235, 16 Stat. 217. "*An Act to amend "An Act granting the Right of Way to Ditch and Canal Owners over the Public Lands, and for other purposes.*" See Page 27.

Added sections to the former act; section 17 extended rights-of-way provisions to all public land and patents.

March 3, 1871, Chapter 122, 16 Stat., 573. "*An Act to incorporate the Texas Pacific Railroad Company, and to aid in the Construction of its Road, and for other Purposes.*" See Page 16.

March 1, 1872, Chapter 24, 17 Stat., 32. "*An Act to set apart a certain Tract of Land lying near the head-waters of the Yellowstone River as a public Park.*" See Page 29.

May 10, 1872, Chapter 152, 17 Stat., 91. "*An Act to promote the Development of the mining Resources of the U.S.*."

"*Be it enacted by the Senate and house of Representatives of the U.S. of America in Congress assembled*, That all valuable mineral deposits in lands belonging to the U.S., both surveyed and unsurveyed, are hereby declared to be free and open to exploration and purchase, and the lands in which they are found to occupation and purchase, by citizens of the U.S. and those who have declared their intention to become such, ..." See Page 27.

March 3, 1875, Chapter 152, 18 Stat. 483; 43 U.S.C. 934-939. "*An Act granting to railroads the right of way through the public lands of the U.S.*." See Page ?.

Grants a limited fee (not easement, 54 I.D. 392) rights-of-way over/across public lands for railroad and station ground purposes. It shall not apply to lands specially reserved from sale such as WRR withdrawals. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

March 3, 1875, Chapter 191, 18 Stat., 517-518. "*An act to set apart a certain portion of the island of Mackinac in the Straits of Mackinac, within the State of michigan, as a national park.*" See page 30.

March 3, 1877, Chapter 107, 19 Stat., 377. "*An act to provide for the sale of desert lands in certain States and Territories.*"

*Provided however* that the right to the use of water by the person so conducting the same, on or to any tract of desert land of six hundred and forty acres shall depend upon bona fide prior appropriation: and such right shall not exceed the amount of water actually

appropriated, and necessarily used for the purpose of irrigation and reclamation: and all surplus water over and above such actual appropriation and use, together with the water of all, lakes, rivers and other sources of water supply upon the public lands and not navigable, shall remain and be held free for the appropriation and use of the public for irrigation, mining and manufacturing purposes subject to existing rights. Said declaration shall describe particularly said section of land if surveyed, and, if unsurveyed, shall describe the same as nearly as possible without a survey.

SEC. 2. That all lands exclusive of timber lands and mineral lands which will not, without irrigation, produce some agricultural crop, shall be deemed desert lands, within the meaning of this action, which fact shall be ascertained by proof of two or more credible witness under oath, whose affidavits shall be fled in the land office in which said tract of land may be situated." See Pages 8, 13.

June 20, 1878, Chapter 359, 20 Stat. 230. "*An Act making appropriations for sundry civil expenses of the government for the fiscal year ending June thirtieth, eighteen hundred and seventy-nine, and for other purposes*" See Page 9.

This Act required the National Academy of Sciences to report a plan for surveying and mapping the Territories and a suitable plan for the publication and distribution of the reports, maps, documents, and other results.

December 16, 1878, Chapter 5, 20 Stat., 258. "*An act to correct an error of enrollment in bill making appropriations for sundry civil expenses of the government for the fiscal year ending June thirtieth, eighteen hundred and seventy-nine, and for other purposes.*" See page 29.

March 3, 1879, Chapter 182, 20 Stat. 394; 43 U.S.C. 31. "*An Act making appropriations for sundry civil expenses of the government for the fiscal year ending June thirtieth, eighteen hundred and eighty, and for other purposes.*"

"For the salary of the Director of the Geological Survey, which office is hereby established under the Interior Department, who shall be appointed by the President, by and with the advice and consent of the Senate, six thousand dollars; *Provided*, That this officer shall have the direction of the Geological Survey, and the classification of the public lands, and examination of the geological structure, minerals resources, and products of the national domain. And that the Director and members of the Geological Survey shall have no personal or private interest in the lands or mineral wealth of the region under survey, and shall execute no surveys or examinations for private parties or corporations; and the Geological and Geographical Survey of the Territories, and the Geographical and Geological Survey of the Rocky Mountain Region, under the Department of the Interior, and the Geographical Surveys West of the One-Hundredth Meridian, under War Department, are hereby discontinued, to take effect on the thirtieth day of June, eighteen hundred and seventy-nine. And all collections of rocks, minerals, soils, fossils, and objects of natural history, archaeology, and ethnology, made by the Coast and Interior Survey, the Geological Survey or by any other parties for the Government of the U.S., when no longer

needed for investigations in progress, shall be deposited in the National Museum."

"For the expense of a commission on the codification of existing laws relating to the survey and disposition of the public domain, and for other purposes, twenty thousand dollars:

*Provided*, that the Commission shall consist of the Commissioner of the General Land Office, the Director of the U.S. Geological Survey, and three civilians, to be appointed by the President, who shall receive a per diem compensation of ten dollars for each day while actually engaged, and their travelling expenses; and neither the Commissioner of the General Land Office nor the Director of the U.S. Geological Survey shall receive other compensation for their services upon said commission than their salaries, respectively, expect their travelling expenses while engaged on said duties; and it shall be the duty of this commission to report to Congress within one year from the time of its organization; first, a codification of the present laws relating to the survey and disposition of the public domain; second, a system and standard of classification of public lands; as arable, irrigate, timber, pasturage, swamp, coal, mineral lands and such other classes as may be deemed proper, having due regard to humidity of climate, supply of water for irrigation, and other physical characteristics; third, a system of land parcelling surveys adopted to the economic uses of the several classes of lands; and, fourth, such recommendations as they may deem wise in relation to the best method of disposing of the public lands of the western portion of the U.S. to actual settlers.

The publications of the Geological Survey shall consist of the annual report of operations, geological and economic maps illustrating the resources and classifications of the lands, and reports upon general economic geology and paleontology. The annual report of the Geological Survey shall accompany the annual report of the Secretary of the Interior. All special memoirs and reports of said survey shall be issued in uniform quarto series if deemed necessary by the Director, but otherwise in ordinary octavos. Three thousand copies of each shall be published for scientific exchanged and for sale at the price of publication; and all literary and cartographic materials, received in exchange shall be the property of the U.S. and form a part of the library of the organization; and the money resulting from the sale of each such publications shall be covered into Treasury of the United States, ..." See Page 10, 11, 63, 74.

This act established the office of Director of the Geological Survey with responsibilities for classification of the public lands. The act authorized publications illustrating the resources and classification of the lands (43 U.S.C. 41). In the original text, these publications included reports, maps, and illustrations necessary for completing the office work. Further related actions include the Joint Resolution Relating to publications of the Geological Survey (May 16, 1902, No. 22, 32 Stat. 741; 43 U.S.C. 41).

July 7, 1884, Chapter 332, 23 Stat. 212; 43 U.S.C. 34. "*An Act making appropriations for sundry civil expenses of the government for the fiscal year ending June thirtieth, eighteen hundred and eighty-five, and for other purposes.*" See page 74.

That scientific employees shall be selected, subject to the approval of the Secretary of the interior exclusively for their qualifications as professional experts).

March 20, 1888, No. 7, 25 Stat. 618. "[No. 7.] *Joint Resolution directing the Secretary of the Interior by means of the Director of the Geological Survey to investigate the practicability of constructing reservoirs for the storage of water in the arid region of the United States, and to report to congress.*"

"Whereas a large portion of the unoccupied public lands of the United States is located within what is known as the arid region and now utilized only for grazing purposes, but much of which, by means of irrigation, may be rendered as fertile and productive as any in the world, capable of supporting a large population thereby adding to the national wealth and prosperity;

Whereas all the water flowing during the summer months in many of the streams of the Rocky Mountains, upon which chiefly the husbandman of the plains and the mountain valleys chiefly depends for moisture for his crops has been appropriated and is used for the irrigation of lands contiguous thereto whereby a comparatively small area has been reclaimed; and

Whereas there are many natural depressions near the sources and along the courses of these streams which may be converted into reservoirs for the storage of the surplus water which during the winter and spring seasons flows through the streams: from which reservoirs the water there stored can be drawn and conducted through properly constructed canals, at the proper season, thus bringing large areas of land into cultivation and making desirable much of the public land for which there is now no demand; therefore be it

"*Resolved by the Senate and House of Representatives of the United States of America in Congress assembled,* That the Secretary of the Interior by means of the Director of the Geological Survey be, and he is hereby, directed to make an examination of that portion of the arid regions of the United States where agriculture is carried on by means of irrigation, as to the natural advantages for the storage of water for irrigating purposes with the practicability of constructing reservoirs, together with the capacity of the streams and the cost of construction and capacity of reservoirs, and such other facts as bear on the question of storage of water for irrigating purposes; and that he be further directed to report to Congress as soon as practicable the result of such investigation." See Page 5, 63, 74.

October 2, 1888, Chapter 1069, 25 Stat. 526; 43 U.S.C. 662. "*An Act making appropriations for sundry civil expenses of the government for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine, and for other purposes.*"

"For the purpose of investigating the extent to which the arid region of the United States can be redeemed by irrigation, and the segregation of the irrigable lands in such arid region, and for the selection of sites for reservoirs and other hydraulic works necessary for the storage and utilization of water for irrigation and the prevention of floods and overflows, and to make the necessary maps, including the pay of employees in field and in office, the cost of all instruments, apparatus, and materials, and all other necessary expenses connected therewith, the work to be performed by the Geological Survey, under the direction of the Secretary of the Interior, the sum of one hundred thousand dollars or so much thereof as may be necessary. And the Director of the Geological Survey under the supervision of the Secretary of the Interior shall make a report to Congress on the first

Monday in December of each year, showing in detail how the said money has been expended, the amount used for actual survey and engineer work in the field in locating sites for reservoirs and an itemized account of the expenditures under this appropriation. And the lands which may hereafter be designated or selected by such United States surveys for sites for reservoirs, ditches or canals for irrigation purposes and all the lands made susceptible of irrigation by such reservoirs, ditches or canals are from this time henceforth hereby reserved from sale as the property of the United States, and shall not be subject after the passage of this act, to entry, settlement, or occupation until further provided by law:"

"*Provided*: That the President may at any time in his discretion by proclamation open any portion or all of the lands reserved by this provision to settlement under the homestead laws." See page 22, 30, 63, 64, 74.

Provided the Geological Survey with funds for the purposes of the investigation and segregation of irrigable lands and sites for reservoirs and other hydraulic works necessary for storage and utilization of water for irrigation and the prevention of floods and overflows. Withdrawals made utilizing this authority were titled Reservoir Sites (RS)). This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat., 2743), however, remaining withdrawals remain intact.

August 30, 1890, Chapter 837, 26 Stat. 391; 43 U.S.C. 662. "*An Act making appropriations for sundry civil expenses of the government for the fiscal year ending June thirtieth, eighteen hundred and ninety-one, and for other purposes.*"

"For topographic surveys in various portions of the United States, three hundred and twenty-five thousand dollars, one-half of which sum shall be expended west of the one hundredth meridian; and so much of the act of October second, eighteen hundred and eighty-eight, entitled "An act making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine, and for other purposes," as provides for the Reservation of arid withdrawal of the public lands from entry, occupation and settlement, is hereby repealed and all entries made or claims initiated in good faith and valid but for said act, shall be recognized and may be perfected in the same manner as if said law had not been enacted, except that reservoir sites heretofore located or selected shall remain segregated and reserved from entry or settlement as provided by said act, until otherwise provided by law, and reservoir sites hereafter located or selected on public lands shall in like manner be reserved from the date of the location or selection thereof."

"No person who shall after the passage of this act, enter upon any of the public lands with a view to occupation, entry or settlement under any of the land laws shall be permitted to acquire title to more than three hundred and twenty acres in the aggregate, under all of said laws, but this limitation shall not operate to curtail the right of any person who has heretofore made entry or settlement on the public lands, or whose occupation, entry or settlement, is validated by this act: *Provided*, That in all patents for lands hereafter taken up under any of the land laws of the United States or on entries or claims validated by this act west of the one hundredth meridian, it shall be expressed that there is reserved from the lands in said patent described, a right of way thereon for ditches or canals constructed by

the authority of the United States." See page 35, 64.

Repealed the Act of October 2, 1888 (Chapter 1069, 25 Stat. 526; 43 U.S.C. 662), except the portion authorizing segregation of reservoir sites.

March 3, 1891, Chapter 561, 26 Stat. 1101; 43 U.S.C. 663. "*An Act to repeal timber-culture laws, and for other purposes.*"

"SEC. 17. That reservoir sites located or selected and to be located and selected under the provisions of "An act making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, eighteen hundred and eighty-nine, and for other purposes," and amendments thereto, shall be restricted to and shall contain only so much land as is actually necessary for the construction and maintenance of reservoirs; excluding so far as practicable lands occupied by actual settlers at the date of the location of said reservoirs ..." See Page 17.

Excluded from the segregation under the Act of October 2, 1888, all lands except those required for reservoirs. Grants a limited fee (not easement) right-of-way to canal and ditch companies for irrigation purposes. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

August 18, 1894, Chapter 301, 28 Stat., 372-423. "*An Act Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, eighteen hundred and ninety-five, and for other purposes.*" See page 38.

January 21, 1895, Chapter 37, 28 Stat. 635; 43 U.S.C. 956. "*An Act To permit the use of the right of way through the public lands for tramroads, canals, and reservoirs, and for other purposes.*" See page ?.

Permits rights-of-way for tramways, canals, or reservoirs. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

May 14, 1896, Chapter 179, 29 Stat. 120. "*An Act To amend the Act approved March third, eighteen hundred and ninety-one, granting the right of way upon the public lands for reservoir and canal purposes.*" See page ?.

Amended the Act of January 21, 1895 (28 Stat. 635; 43 U.S.C. 956) to include generating, manufacturing, or distributing electric power. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

January 13, 1897, Chapter 11, 29 Stat. 484; 43 U.S.C. 952-955. "*An Act Providing for the location and purchase of public lands for reservoir sites.*" See page 64.

Allows for the construction of reservoirs for livestock upon unoccupied public lands, not mineral or otherwise reserved, and after proper filing with the land office, such land will be reserved from sale by the Secretary of the Interior. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

February 18, 1897, No. 13, 29 Stat. 701; 43 U.S.C. 42. "*Joint Resolution Providing for the*

*distribution of the maps and atlases of the United States Geological Survey*." See page 74, 75.

Director of the Geological Survey is authorized and directed to distribute topographic and geologic maps and atlases of the United States. Copies of Maps and Atlases are to be sent to Senators, Representatives, and Delegates (43 U.S.C. 43).

February 26, 1897, Chapter 335, 29 Stat. 599; 43 U.S.C. 664. "*An Act to provide for the use and occupation of reservoir sites reserved.*" See page ?.

All reservoir sites shall be open to use and occupation under the right-of-way Act of March 3, 1891. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

May 11, 1898, Chapter 292, 30 Stat., 404. "*An Act To amend an Act to permit the use of the right of way through public lands for tramroads, canals, and reservoirs, and for other purposes.*"

SEC. 2. "That the rights of way for ditches, canals, or reservoirs hereto fore or hereafter approved under the provisions of sections eighteen; nineteen, and twenty-one of the Act entitled 'An Act to repeal timber-culture laws, and for other purposes,' approved March third, eighteen hundred and ninety-one, may be used for purposes of water transportation, for domestic purposes, or for the development of power, as subsidiary to the main purpose of irrigation." See page 17, 92.

Amended the Act of January 21, 1895 (Chapter 37, 28 Stat. 635, 43 U.S.C. 956) to allow rights-of-way for domestic, public, and other beneficial uses. Amended the Act of March 3, 1891 (Chapter 561, 26 Stat. 1101), to allow rights-of-way for purposes of water transportation, domestic purposes, development of power as subsidiary to the main purpose of irrigation. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

March 3, 1899, Chapter 427, 30 Stat. 1233; 43 U.S.C. 665; 16 U.S.C. 525. "*An Act Making appropriations to supply deficiencies in the appropriations for the physical year ending June thirtieth, eighteen hundred and ninety-nine, and for prior years, and for other purposes.*" See page ?.

Secretary of the Interior may approve surveys, etc., of rights-of-way across reservoir sites. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

February 15, 1901, Chapter 372, 31 Stat. 790. "*An Act Relating to rights of way through certain parks, reservations, and other public lands*" See Pages 15, 17, 20.

Permits rights-of-way through public lands, forests and other reservations and certain National Parks for electrical plants, poles, and lines for generation and distribution of electrical power, and for canals, ditches, pipes,and pipe lines, flumes, tunnels, or other water conduits, and for water plants, dams, and reservoirs to promote irrigation, mining, quarrying, manufacturing or cutting of timber or lumber, domestic supplies, public or any

other beneficial uses. The Bureau of Land Management issues such rights-of-way, except for National Forest lands for which the Forest Service issues the permit. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

May 16, 1902, No.22, 32 Stat. 741; 43 U.S.C. 41. "*Joint Resolution Relating to publications of the Geological Survey.*" See page 64, 74, 75.

Publications shall consist of professional papers, bulletins, water-supply and irrigation papers, and maps, folios, and atlases as may be required by existing law.

June 17, 1902, Chapter 1093, 32 Stat. 388-391. "*An Act Appropriating the receipts from the sale and disposal of public lands in certain States and Territories to the construction of irrigation works for the reclamation of arid lands.*" See page 38, 62.

The Secretary of the Interior shall withdraw from public entry the land required for any irrigation works. Withdrawals were initiated which became the responsibility of the Bureau of Reclamation. (The BLM may need Geological Survey records to verify these withdrawals.)

April 12, 1904, Chapter 1249, 33 Stat., 173. "*An Act To amend an Act approved by December sixteenth, eighteen hundred and seventy-eight, and to authorize the Secretary of the Interior to grant additional water rights to hotels and bath houses at Hot Springs, Arkansas, and for other purposes.*" See page ?.

February 1, 1905, Chapter 288, 33 Stat. 628; 16 U.S.C. 524. "*An Act Providing for the transfer of forest reserves from the Department of the Interior to the Department of Agriculture.*" See page ?.

The Secretary of the Department of Agriculture shall execute all laws affecting the public lands heretofore or hereafter reserved under the provisions of section twenty-four of the Act entitled "An act to repeal timber-culture laws, and for other purposes...." Rights-of-ways for construction of dams, reservoirs, etc., within and across forest reserves are granted under such rules and regulations as may be prescribed by the Secretary of the Interior. This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

April 16, 1906, Chapter 1631, 34 Stat., 116-117. "*An Act Providing for the withdrawal from public entry of lands needed for town-site purposes in connection with irrigation projects under the reclamation Act of june seventeenth, nineteen hundred and two, and for other purposes.*" See page 19.

June 21, 1906, Chapter 3504, 34 Stat. 355. "*An Act Making appropriations for the current and contingent expenses of the Indian department, for fulfilling treaty stipulations with various Indian tribes, and for other purposes, for the fiscal year ending June thirtieth, nineteen hundred and seven.*" See page 47, 63, 64.

The withdrawal made utilizing this authority is titled an "Indian Reservoir Site Reserve" (IRSR) (see Secretarial Order of June 29, 1908).

June 21, 1906, Chapter 3508, 34 Stat. 386-387. "*An Act To regulate the construction of dams across navigable waters.*" See page 43.

Provided approval authority for the Corps of Engineers over any dam across any navigable waters of the United States for waterpower or other purposes.

June 30, 1906, Chapter 3914, 34 Stat. 727; 43 U.S.C. 44. "*An Act Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and seven, and for other purposes.*" See page 74.

Provided for furnishing transfers or copies of cartographic or other engraved or lithographic data for the cost thereof with ten percentum added.

March 3, 1909, Chapter 187, 35 Stat., 644-645. "*An Act To provide for the granting and patenting to the State of Colorado desert lands within the former Ute Indian Reservation in said State.* See page 54.

March 3, 1909, Chapter 263, 35 Stat. 781-815. "*An Act Making appropriations for the current and contingent expenses of the Indian Department, for fulfilling treaty stipulations with various Indian tribes, and for other purposes, for the fiscal year ending June thirtieth, nineteen hundred and ten.*"

"SEC. 22: *The Secretary of the Interior is authorized to reserve from location, entry, sale, or other appropriation all lands within said Flathead Indian Reservation chiefly valuable of power sites or reservoir sites, and he shall report to congress such reservations*" See pages 48, 63, 64.

The withdrawal made utilizing this authority is titled an "Indian Lands Power Site Reserve" (IPSR).

March 4, 1909, Chapter 299, 35 Stat. 989; 43 U.S.C. 45. "*An Act Making appropriations for sundry civil expenses of the Government for the fiscal year ending June thirtieth, nineteen hundred and ten, and for other purposes.*" See page 74, 75.

For the purchase of necessary books for the library, including directories and professional and scientific periodicals needed ....

May 13, 1910, Chapter 233, 36 Stat. 367-368. "*An Act To authorize the sale of certain lands belonging to the Indians on the Siletz Indian Reservation, in the State of Oregon.*" See page 63, 64.

Provided for Secretary of the Interior to reserve any water-power sites that may be located on the lands offered for sale. The withdrawal made utilizing this authority is titled an "Indian Lands Power Site Reserve" (IPSR).

June 1, 1910, Chapter 264, 36 Stat. 456. "*An Act To authorize the survey and allotment of lands*

*embraced within the limits of the Fort Berthold Indian Reservation, in the State of North Dakota, and the sale and disposition of a certain portion of the surplus lands after allotment, and making appropriation and provision to carry the same into effect.*" See page 63, 64, 74.

The Secretary of the Interior is hereby authorized to set aside and reserve from location, entry, sale, allotment, or other appropriation such tracts as are found to be chiefly valuable for power sites or reservoir sites. The withdrawal made utilizing this authority is titled Reservoir Site Reserve (RSR).

June 20, 1910, Chapter 310, 36 Stat. 564. "*An Act To enable the people of New Mexico to form a constitution and state Government and be admitted into the Union on an equal footing with the original States; and to enable the people of Arizona to form a constitution and state Government and be admitted into the Union on an equal footing with the original States.*" See page ?.

Reserved to the United States all land actually or prospectively valuable for the development of water powers and which shall be ascertained and designated by the Secretary of the Interior within 5 years. Withdrawals made utilizing this authority were titled Waterpower Designations (WPD).

June 22, 1910, Chapter 318, 36 Stat., 583-584. "*An Act To provide for agricultural entries on coal lands.*" See page 54.

June 25, 1910, Chapter 421, 36 Stat. 847; 16 U.S.C. 471, 43 U.S.C. 141. "*An Act To authorize the President of the United States to make withdrawals of public lands in certain cases.*"

"*... the President may, at any time in his discretion, temporarily withdraw from settlement, location, sale, or entry any of the public lands of the United States, and the District of Alaska, and reserve the same for water-power sites, irrigation, classification of lands, or other public purposes to be specified in the orders of withdrawals, and such withdrawals or reservations shall remain in force until revoked by him or by act of Congress.*" See page 63, 64.

The President may withdraw and reserve such lands for waterpower sites, irrigation, classification, or other public purposes. Withdrawals made utilizing this authority were titled Power Site Reserves (PSR) and Reservoir Site Reserves (RSR). This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743), however, remaining withdrawals remain intact.

June 25, 1910, Chapter 431, 36 Stat. 858; 43 U.S.C. 148. "*An Act To provide for determining the heirs of deceased Indians, for the disposition and sale of allotments of deceased Indians, for leasing of allotments, and for other purposes.*" See page 63, 64.

The Secretary of the Interior is authorized to reserve land within any Indian Reservation valuable for power or reservoir sites. Withdrawals made utilizing this authority were titled Indian Power Site Reserves (IPSR). This act was repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743), however, remaining

withdrawals remain intact.

February 25, 1911, Chapter 164, 36 Stat. 932. "*An Act To restore to the public domain certain lands withdrawn for reservoir purposes in Millard County, Utah.*" See page 64.

The President may restore to the public domain portions of the lands withdrawn under the act of 1888 withdrawn for a reservoir site in Millard County, Utah.

March 3, 1911, Chapter 210, 36 Stat. 1075. "*An Act Making appropriations for the current and contingent expenses of the Bureau of Indian Affairs, for fulfilling treaty stipulations with various Indian tribes, and for other purposes, for the fiscal year ending June thirtieth, nineteen hundred and twelve.*" See page 63, 64, 74.

Expenditures from this appropriation could be used for investigations an surveys for power and reservoir sites on Indian Reservations. Secretary of the Interior is authorized in his discretion to reserve from sale or other disposition any part of the old Fort Spokane Military Reservation chiefly valuable for power sites and reservoir sites. The withdrawal made utilizing this authority is titled Power Site Reserve (PSR).

March 4, 1911, Chapter 238, 36 Stat. 1253; 43 U.S.C. 961. "*An Act Making appropriations for the Department of Agriculture for the fiscal year ending June thirtieth, nineteen hundred and twelve.*" See page ?.

Authorizes and empowers the head of the departments having jurisdiction over the lands to grant easements for rights-of-way for electrical poles and lines. The Bureau of Land Management issues such rights-of-way for land administering agencies in Interior; for all others, the grants are issued by the Heads of Departments having jurisdiction.

January 27, 1913, Chapter 14; 37 Stat. 651. "*An Act To subject lands of former Fort Niobrara Military Reservation and other lands to homestead entry.*" See page 63, 64.

Provides that the Secretary of the Interior is authorized, in his discretion, to reserve from sale or disposition any lands of former Fort Niobrara Military Reservation and other lands, in the State of Nebraska, chiefly valuable for power purposes. Withdrawals made utilizing this authority were titled Power Site Reserves (PSR).

March 4, 1915, Chapter 144; 38 Stat. 1100. "*An Act Making appropriations for the Department of Agriculture for the fiscal year ending June thirteenth, nineteen hundred and sixteen.*" See page ?.

Under Departmental instructions of January 13, 1916 (44 L.D. 513), Federal agencies may appropriate rights-of-way across Federal lands, with concurrence of agency having jurisdiction or control, for trails, roads, bridges, fire lanes, telephone lines, and fences. On January 10, 1963, the Federal Power Commission (Now the FERC) stated in a general Engineering Power Report (EPR) that it has no objection to the recordation of such rights-of-way across powersite lands without prior reference to the Commission, except that the Commission would appreciate the opportunity to appraise and report on the power potential of the powersite lands involved in instances where facilities would substantially

increase costs of power development.

June 9, 1916, Chapter 137, 39 Stat. 219). "*An Act To alter and amend an Act entitled 'An Act granting lands to aid in the construction of a railroad and telegraph line from the Central Pacific Railroad, in California, to Portland, in Oregon,' approved July twenty-fifth, eighteen hundred and sixty-six, as amended by the Acts of eighteen hundred and sixty-eight and eighteen hundred and sixty-nine, and to alter and amend an Act entitled 'An Act granting lands to aid in the construction of a railroad and telegraph line from Portland to Astoria and McMinnville, in the State of Oregon,' approved May fourth, eighteen hundred and seventy, and for other purposes*" See Page 16, 63, 64.

Provides authority for the Secretary of the Interior to classify as powersite lands within the revested Oregon and California railroad grant. Withdrawals made utilizing this authority were titled Waterpower Designations (WPD). This act was partially repealed by the Act of October 21, 1976 (FLPMA, Public Law 94-579, 90 Stat. 2743).

February 26, 1919, Chapter 47, 40 Stat. 1180. "*An Act To accept from the Southern Oregon Company, a corporation organized under the laws of the State of Oregon, a reconveyance of the lands granted to the State of Oregon by the Act approved March third, eighteen hundred and sixty-nine, entitled 'An Act granting lands to the State of Oregon to aid in the construction of a military wagon road from the navigable waters of Coos Bay to Roseburg, in said State,' commonly known as the Coos Bay Wagon Road grant, to provide for the disposition of said lands, and for other purposes.*"

Provides for designation as powersites in the reconveyed Coos Bay Wagon Road grant according to procedures in the Act of June 9, 1916 (Chapter 137, 39 Stat. 219). Withdrawals made under this authority were titled Waterpower Designations (WPD).

June 10, 1920, Chapter 285, 41 Stat. 1063; 16 U.S.C. 791-823). "*An Act To create a Federal Power Commission; to provide for the improvement of navigation; the development of water power; the use of the public lands in relation thereto, and to repeal section 18 of the River and Harbor Appropriation Act, approved August 8, 1917, and for other purposes.*"

"SEC. 24. "Any lands of the United States included in any proposed project under the provisions of this Part shall from the date of filing of application therefor be reserved from entry, location, or other disposal under the laws of the United States until otherwise directed by the Commission or by Congress. Notice that such application has been made, together with the date of filing thereof and a description of the lands of the United States affected thereby, shall be filed in the local land office for the district in which such lands are located. Whenever the Commission shall determine that the value of any lands of the United States so applied for, or heretofore or hereafter reserved or classified as power sites, will not be injured or destroyed for the purposes of power development by location, entry, or selection under the public land laws, the Secretary of the Interior, upon notice of such determination, shall declare such lands open to location, entry, or selection, for such purpose or purposes and under such restrictions as the Commission may determine, subject to and with a reservation of the right of the United States or its permittee or licensees to

enter upon, occupy, and use any part or all of said lands necessary, in the judgment of the commission, for the purposes of this Part, which right shall be expressly reserved in every patent issued for such lands; and no claim or right to compensation shall accrue from the occupation or use of any of said lands for said purposes. The United States or any licensee for any such lands hereunder may enter thereupon for the purposes of this Part upon payment of any damages to crops, buildings, or other improvements caused thereby to the owner thereof, or upon giving a good and sufficient bond to the United States for the use and benefit of the owner to secure the payment of such damages as may be determined and fixed in an action brought upon the bond in a court of competent jurisdiction, said bond to be in the form prescribed by the Commission: *Provided*, That locations, entries, selection, or filings heretofore made for lands reserved as water power sites, or in connection with water power development, or electrical transmission may proceed to approval or patent under and subject to the limitations and conditions in this section contained.

SEC. 30. That the short title of this Act shall be "The Federal Water Power Act" (FWPA).

*Provided further*, That before any lands applied for, or heretofore or hereafter reserved, or classified as power sites, are declared open to location, entry, or selection by the Secretary of the Interior, notice of intention to make such declaration shall be given to the Governor of the State within which such lands are located, and such State shall have ninety days from the date of such notice within which to file, under any statute or regulation applicable thereto, an application for the reservation to the State, or any political subdivision thereof, of any lands required as a right-of-way for a public highway or as a source of materials for the construction and maintenance of such highways, and a copy of such application shall be filed with the Federal Power Commission; and any location, entry, or selection of such lands, or subsequent patent thereof, shall be subject to any rights granted the State pursuant to such application" See Page 37, 58, 64, 74.

Provided that the Secretary of the Interior would open land after the Federal Power Commission (now the FERC) determined that the value of land reserved or classified will not be injured or destroyed for the purposes of power development. Centralized the Federal WRR licensing authority, with provisions for Secretarial stipulations. It requires planning for the development, transmission and utilization of electric power best adapted to any existing comprehensive plans. It provides for withdrawals for developers upon application.

June 7, 1924, Chapter 303, 43 Stat. 592; 43 U.S.C. 42. "*An Act Making appropriations for the Legislative Branch of the Government for the fiscal year ending June 30, 1925, and for other purposes.*" See page 74.

Provided monies for supplying books to depository libraries, and stopped distribution of geological publications to libraries designated as special depositories.

August 26, 1935, Chapter 687, 49 Stat. 838; 16 U.S.C. 791a-825. "*An Act To provide for control and regulation of public-utility holding companies, and for other purposes.*" Public Utility

Act of 1935. See page ?.

Amends the act of June 10, 1920 (Chapter 285, 41 Stat. 791-823) including the short title, "Federal Power Act" (FPA).

May 14, 1940, Chapter 190, 54 Stat. 212, 43 U.S.C. 36a. "*An Act To authorize the Director of the Geological Survey, under the general supervision of the Secretary of the Interior, to acquire certain collections for the United States*." See page 74, 75.

Provided for the acquisition of Scientific or Technical books, maps, etc.

August 7, 1946, Chapter 770, § 10, 60 Stat. 867; 43 U.S.C. 41. "*An Act To discontinue certain reports now required by law*." See page ?.

Acts requiring the submission of annual reports or statements are repealed to the extent of such requirement (this effects the Act of March 3, 1879 (Chapter 182, 20 Stat. 395), referenced on page 87). Discontinued the annual report of the geological survey.

July 21, 1947, Chapter 273; 61 Stat. 398; 43 U.S.C. 450. "*An Act To authorize the Director of the United States Geological Survey to produce and sell copies of aerial or other photographs and mosaics, and photographic or photostatic reproductions of records, on a reimbursement of appropriations basis*." See page 74.

Production and Sale of Copies of Photographs and Records; disposition of receipts.

February 5, 1948, Chapter 45, 62 Stat. 17; 25 U.S.C. 323-328. "*An Act To empower the Secretary of the Interior to Grant rights-of-way for various purposes across lands of individual Indians or Indian tribes, communities, bands or nations*." See page ?.

That the Secretary is empowered to grant rights-of-way for various purposes over Indian lands. Such rights-of-way are issued by the Bureau of Indian Affairs.

May 28, 1948, Public Law 559, Chapter 351, 62 Stat. 275; 16 U.S.C. 818. "*An Act To amend section 24 of the Federal Power Act so as to provide that the States may apply for reservations of portions of power sites released for entry, location, or selection to the States for Highway purposes*." See page ?.

Prior to the Secretary opening lands reserved for WRR sites, notice shall be given to the Governor of the State, who may file for the reservation of land to the state.

June 20, 1949, Public Law 109, 63 Stat. 203-207. "*An Act To provide for the reorganization of Government agencies, and for other purposes*." Reorganization Act of 1949.

Provided for the reorganization of government agencies. The resulting Interior's Reorganization Plan No. 3 of 1950, was effective May 24, 1950 (64 Stat. 1262). Transfers to the Secretary all functions of other officers of the Department and all functions of all agencies and employees of the Department.

June 4, 1954, Public Law 387, Chapter 263, 68 Stat. 173-175; 43 U.S.C. 869-1. "*An Act To amend the Recreation Act of June 14, 1926, to include other public purposes and to permit*

*nonprofit organizations to purchase or lease public lands for certain purposes*."

The Secretary of Interior after due consideration as to the power value of the land, whether or not withdrawn therefore, may sell or lease such land.

August 9, 1955, Public Law 322, Chapter 682, 69 Stat. 618. "*An Act To authorize the Secretary of the Interior to investigate and report to the Congress on projects for the conservation, development, and utilization of the water resources of Alaska.*" See page ?.

For the purpose of encouraging and promoting the development in Alaska, the Secretary of the Interior is authorized to make investigations of projects for the conservation, development, and utilization of the water resources of Alaska.

June 29, 1960, Public Law 86-533; 74 Stat. 248 "*An Act To repeal certain provisions of law requiring the submission of certain reports to congress, and for other purposes.*" See page ?.

Repealed Acts requiring reporting on Indian Power Site Reserves and Reserves.

September 3, 1964, Public Law 88-577, 78 Stat. 890. "*An Act To establish a National Wilderness Preservation System for the permanent good of the whole people, and for other purposes.*" Wilderness Act. See page ?.

The President may authorize "prospecting for water resources, the establishment of reservoirs, power projects, transmission lines, and other facilities needed in the public interest. Wilderness and WRR values are not incompatible.

July 9, 1965, Public Law 89-72, 79 Stat. 213-218. "*An Act To provide uniform policies with respect to recreation and fish and wildlife benefits and costs of Federal multiple-purpose water resource projects, and for other purposes.*" Federal Water Project Recreation Act. See page ?.

It is the policy of the Congress and the intent of this act that in investigating and planning any Federal navigation, flood control, reclamation, hydroelectric, or multiple-purpose water resource project, consideration shall be given to opportunities for outdoor recreation for fish and wildlife enhancement.

July 22, 1965, Public Law 89-80, 79 Stat. 244-254. "*An Act To provide for the optimum development of the Nation's natural resources through the coordinated planning of a water resources council and river basin commissions, and by providing financial assistance to the States in order to increase State participation in such planning.*" Water Resource Planning Act. See page ?.

This act was an attempt to remove the "pork Barrel" approach to WRR development by forcing a systematic, planning process.

October 2, 1968, Public Law 90-542, 82 Stat. 906. "*An Act To provide for a National Wild and Scenic Rivers System, and for other purposes.*" Wild and Scenic Rivers Act. See page ?.

The established policy of dams needs to be completed by a policy that would preserve

other selected rivers in their free-flowing condition. The Federal Energy Regulatory Commission shall not license the construction of any dam, water conduit, reservoir, powerhouse, transmission line or other project works on or directly affecting any designated areas. In all planning for development of water resources, consideration shall be given by all Federal agencies involved.

January 1, 1970, Public Law 91-190, 40 U.S.C. 4321-4347. "*An Act to establish a national policy for the environment, to provide for the establishment of a Council on Environmental Quality, and for other purposes.*" National Environmental Policy Act of 1969. See page .

Requires systematic, interdisciplinary, cooperation and planning and pertains to the private development proponent, land management agency and the FERC.

August 17, 1974, Public Law 93-378, 88 Stat. 476-480. "*An Act To provide for the Forest Service, Department of Agriculture, to protect, develop, and enhance the productivity and other values of certain of the Nation's lands and resources, and for other purposes.*" Forest and Rangeland Renewable Resources Planning Act of 1974. See page ?.

The Secretary of Agriculture shall prepare a Renewable Resource Assessment, a comprehensive and appropriately detailed inventory of renewable resources, and develop land management plans.

October 21, 1976, Public Law 94-579; 90 Stat. 2743. "*An Act To establish public land policy; to establish guidelines for its administration; to provide for the management, protection, development, and enhancement of the public lands; and for other purposes.*" Federal Land Policy and Management Act of 1976. See page ?.

Repealed some of the above Acts, provides the authority for the Secretary of the Interior to make, modify, revoke, and review and extend withdrawals, and precludes delegation of this authority to heads of bureaus and offices.

October 24, 1992, Public Law 102-486, 106 Stat., 2776. "*An Act To provide for improved energy efficiency.*" Energy Policy Act of 1992. See page ?.

TITLE XXIV--NON-FEDERAL POWER ACT HYDROPOWER PROVISIONS. SEC. 2401. RIGHTS-OF-WAY ON CERTAIN FEDERAL LANDS. Section 501 of the Federal Land Policy and Management Act of 1976 (43 U.S.C. 1761) is amended--(1) by inserting in subsection (a) after "public lands" the following: "(including public lands, as defined in section 103(e) of this act, which are reserved from entry pursuant to section 24 of the Federal Power Act (16 U.S.C. 818))";

October 30, 1992, Public Law 102-575, 106 Stat., 4693. TITLE XXX--WESTERN WATER POLICY REVIEW.

SEC. 3001. SHORT TITLE. This title may be cited as the "*Western Water Policy Review Act of 1992.*"

SEC. 3002. CONGRESSIONAL FINDINGS. The Congress finds that--

(1) the Nation needs an adequate water supply for all states at a reasonable cost;

(2) the demands on the Nation's finite water supply are increasing;

(3) coordination on both the Federal level and the local level is needed to achieve water policy objectives;

(4) not less than fourteen agencies of the Federal Government are currently charged with functions relating to the oversight of water policy;

(5) the diverse authority over Federal water policy has resulted in unclear goals and an inefficient handling of the Nation's water policy;

(6) the conflict between competing goals and objectives by Federal, State, and local agencies as well as by private water users is particularly acute in the nineteen Western States which have arid climates which include the seventeen reclamation States, Hawaii, and Alaska;

(7) the appropriations doctrine of water allocation which characterizes most western water management regimes varies from State to State, and result in many instances in increased competition for limited resources;

(8) the Federal Government has recognized and continues to recognize the primary jurisdiction of the several States over the allocation, priority, and use of water resources of the States, except to the extent such jurisdiction has been preempted in whole or in part by the Federal Government, including, but not limited to, express or implied Federal reserved water rights either for itself or for the benefit of Indian Tribes, and that the Federal Government will, in exercising its authorities, comply with applicable State laws;

(9) the Federal Government recognizes its trust responsibilities to protect Indian water rights and assist Tribes in the wise use of the resources;

(10) Federal agencies, such as the Bureau of Reclamation, have had, and will continue to have major responsibilities in assisting States in the wise management and allocation of scarce water resources; and

(11) the Secretary of the Interior, given his responsibilities for management of public land, trust responsibilities for Indians, administration of the reclamation program, investigations and reviews into ground water resources through the Geologic Survey, and the Secretary of the Army, given his responsibilities for flood control, water supply, hydroelectric power, recreation, and fish and wildlife enhancement, have the resources to assist in a comprehensive review, in consultation with appropriate officials from the nineteen Western States, into the problems and potential solution facing the nineteen Western States and the Federal Government in the increase in competition for the scarce water resources of the Western states."

SEC. 3003. Presidential Review.

(a) The President is directed to undertake comprehensive review of Federal activities in the nineteen Western States which directly or indirectly affect the allocation and use of water resources, whether surface or subsurface and to submit a report on the President's findings, together with recommendations, if any, to the Committees on Energy and Natural Resource, Environment and Public Works and Appropriations of the Senate and the Committees on Interior and Insular Affairs, Public Works and Transportation, Merchant Marine and Fisheries and Appropriations of the House of Representatives.

(b) Such report shall be submitted within three years from the date of enactment of

this Act.

(c) In conducting the review and preparing the report, the President is directed to consult with the Advisory Commission established under section 3004 of this title, and may request the Secretary of the Interior and the Secretary of the Army or other Federal officials or the Commission to undertake such studies or other analyses as the President determines would assist in the review.

(d) The President shall consult periodically with the Commission, and upon the request of the President, the heads or other Federal agencies are directed to cooperate with and assist the Commission in its activities.

SEC. 3004. The ADVISORY COMMISSION.

(a) The President shall appoint an Advisory Commission (hereafter in this title referred to as the "Commission") to assist in the preparation and review of the report required under this title.

(b) The Commission shall be composed of eighteen members as follows:

(1) Ten members appointed by the President including:

(A) the Secretary of the Interior or his designee;

(B) the Secretary of the Army or his designee;

(C) at least one representative chosen from a list submitted by the Western Governors Association; and

(D) at least one representative chosen from a list submitted by Tribal governments located in the Western States.

(2) In addition to the ten members appointed by the President, twelve Members from the United States Congress shall serve as ex officio members of the Commission. For the United States Senate: the Chairmen and the Ranking Minority Member of the Committee on Energy and Natural Resources, and Appropriations, and the Subcommittee of the Committee on Energy and Natural resources which has jurisdiction over the Bureau of Reclamation. For the United State House of Representatives: the Chairman and Ranking Minority Members of the Committee on Interior and Insular Affair, Public Works and Transportation, and Appropriations.

(c) The President shall appoint one member of the Commission to serve as Chairman.

(d) Any vacancy which may occur on the Commission shall be filled in the same manner in which the original appointment was made.

(e) Members of the Commission shall serve without compensation but shall be reimbursed for travel, substance, and other necessary expenses incurred by them in the performance of their duties.

SEC. 3005. DUTIES OF THIS COMMISSION. The Commission shall--

(1) review present and anticipated water resource problems affecting the nineteen Western States, making such projections of water supply requirements as may be necessary and identifying alternative ways of meeting these requirements--giving considerations, among other things, to conservation and more efficient use of existing supplies, innovations encourage the most beneficial use of water and recent technological advances;

(2) examine the current and proposed Federal Programs affecting such States and recommend to the President whether they should be continued or adopted and, if so, how

they should be managed for the next twenty years, including the possible reorganization or consolidation of the current water resources development and management agencies;

(3) review the problems of rural communities relating to water supply, potable water treatment, and wastewater treatment;

(4) review the need and opportunities for additional storage or other arrangements to augment existing water supplies including, but not limited to, conservation;

(5) review the history, use, and effectiveness of various institutional arrangements to address problems of water allocation, water quality, planning, flood control and other aspect of water development and use, including, but not limited to, interstate water compact, Federal-State regional corporations, river basin commissions, the activities of the Water Resources Council, municipal and irrigation district and other similar entities with specific attention to the authorities of the Bureau of Reclamation under reclamation law and the Secretary of the Army under water resource law;

(6) review the legal regime governing the development and use of water and the respective roles of both the Federal Government and the States over the allocation and use of water, including an examination of riparian zones, appropriation and mixed systems, market transfers, administrative allocations, ground water management, interbasin transfers, recordation of rights, Federal-State relations including the various doctrines of Federal reserved water rights (including Indian water rights and the development in several States of the concept of a public trust doctrine); and

(7) review the activities, authorities, and responsibilities of the various Federal agencies with direct water resources management responsibility, including but not limited to the Bureau of Reclamation, the Department of the Army, and those agencies whose decision would impact on water resource availability Add allocation, including, but not limited to, The Federal Energy Regulatory Commission.

SEC. 3006. REPRESENTATIVES.

(a) The Chairman of the Commission shall invite the Governor of each Western State to designate a representative to work closely with the Commission and its staff in matters pertaining to this title.

(b) The Commission, at its discretion, may invite appropriate public or private interest groups including, but not limited to, Indian and Tribal organizations to designate a representative to work closely with the Commission and its staff in matter pertaining to this title.

SEC. 3007. POWERS OF THE COMMISSION.

(a) The Commission may--

(1) hold such hearings, sit and act at such times and places, take such testimony, and receive such evidence as may deem advisable:

(2) use the United States mail in the same manner and upon the same conditions as other departments and agencies of the United States;

(3) enter into contracts or agreements for studies and surveys with public and private organizations and transfer funds to Federal agencies to carry out such aspect of the Commission's functions as the Commission determines can best be carried out in that manner; and

(4) incur such necessary expenses and exercise such other powers as are consistent with and reasonably required to perform its functions under this title.

(b) Any member of the Commission is authorized to administer oaths when it is determined by a majority of the Commission that testimony shall be taken or evidence received under oath.

(c) The Commission shall have a Director who shall be appointed by the Commission and who shall be paid at a rate not to exceed the maximum rate of basic pay payable for level II of the Executive Schedule.

(1) With the approval of the Commission, the Director may appointment and fix the pay of such personnel as the Director considers appropriate but only to the extent that such personnel cannot be obtained from the Secretary of the Interior or by detail from other Federal agencies. Such personnel may be appointed without regard to the provisions of title 5, United States Code, governing appointments in the competitive service, and may be paid without regard to the provisions of chapter 51 and subchapter III of chapter 53 of such Title relating to classification and General schedule pay rates.

(2) With the approval of the Commission, the Director may procure temporary and intermittent services under section 3109(b) of title 5 of the United States Code, but at rates for individually not to exceed the daily equivalent of the maximum annual rate of basic pay payable for GS-18 of the General Schedule.

(d) The Secretary of the Interior and the Secretary of the Army shall provide such office space, furnishings and equipment as may be required to enable the Commission to perform its functions. The Secretary shall also furnish the Commission with such staff, including clerical support, as the Commission may require.

Sec. 3008. POWERS AND DUTIES OF THE CHAIRMAN.

(a) Subject to general policies adopted by the Commission, the Chairman shall be the chief executive of the Commission and shall exercise its executive and administrative powers as set forth in paragraphs (2) through (4) of section 3007(a).

(b) The Chairman may make such provisions as he shall deem appropriate authorizing the performance of any of his executive and administrative functions by the Director or other Personnel of the Commission.

SEC. 3009. OTHER FEDERAL AGENCIES.

(a) The Commission shall, to the extent practicable, utilize the service of the Federal water resource agencies.

(b) Upon request of the Commission, the President may direct the head of any other Federal department or agency to assist the Commission and such head of any Federal department or agency is authorized--

(1) to furnish to the Commission, to the extent permitted by law and within the limits of available funds, including funds transferred for that purpose pursuant to section 3007(a)(7) of this title, such information as may be necessary for carrying out its functions and as may be available to or procurable by such department or agency, and

(2) to detail to temporary duty with the Commission on a reimbursable basis such

personnel within his administrative jurisdiction as it may need or believe to be useful for carrying out its function, each such detail to be without loss of seniority, pay, or other employee status.

(c) Financial and administrative services (including those related to budgeting, accounting, financial reporting, personnel, and procurement) shall be provided the Commission by the Secretary of the Interior.

SEC. 3010. APPROPRIATIONS. There are hereby authorized to be appropriated not to exceed $10,000,000 to carry out the purposes of sections 3001 through 3009 of this title.